

### ***North Oahu (West)***

The North Oahu (West) basin is also largely unsewered and is served by the Pa'alaa Kai WWTP. Built in the mid-1980s, the Pa'alaa Kai WWTP currently treats 0.12 mgd of wastewater flow and has a secondary treatment capacity of 0.14 mgd.

The North Oahu (East) and North Oahu (West) basins have a combined population of approximately 31,100, including military bases.

### ***Waianae***

The Waianae basin has a population of approximately 39,300 and is served by the Waianae WWTP. The Waianae WWTP was built in the 1960s and was upgraded to secondary treatment in 1995. It currently treats 3.2 mgd of wastewater flow and has a secondary capacity of 5.2 mgd.

### ***Central Oahu***

The Central Oahu basin has a population of approximately 45,300 (including military bases), and is served by the Wahiawa WWTP. Built in the 1950s, the Wahiawa WWTP currently treats 1.89 mgd of wastewater flow and has a secondary treatment capacity of 2.5 mgd. It serves the communities of Wahiawa and Whitmore Village.

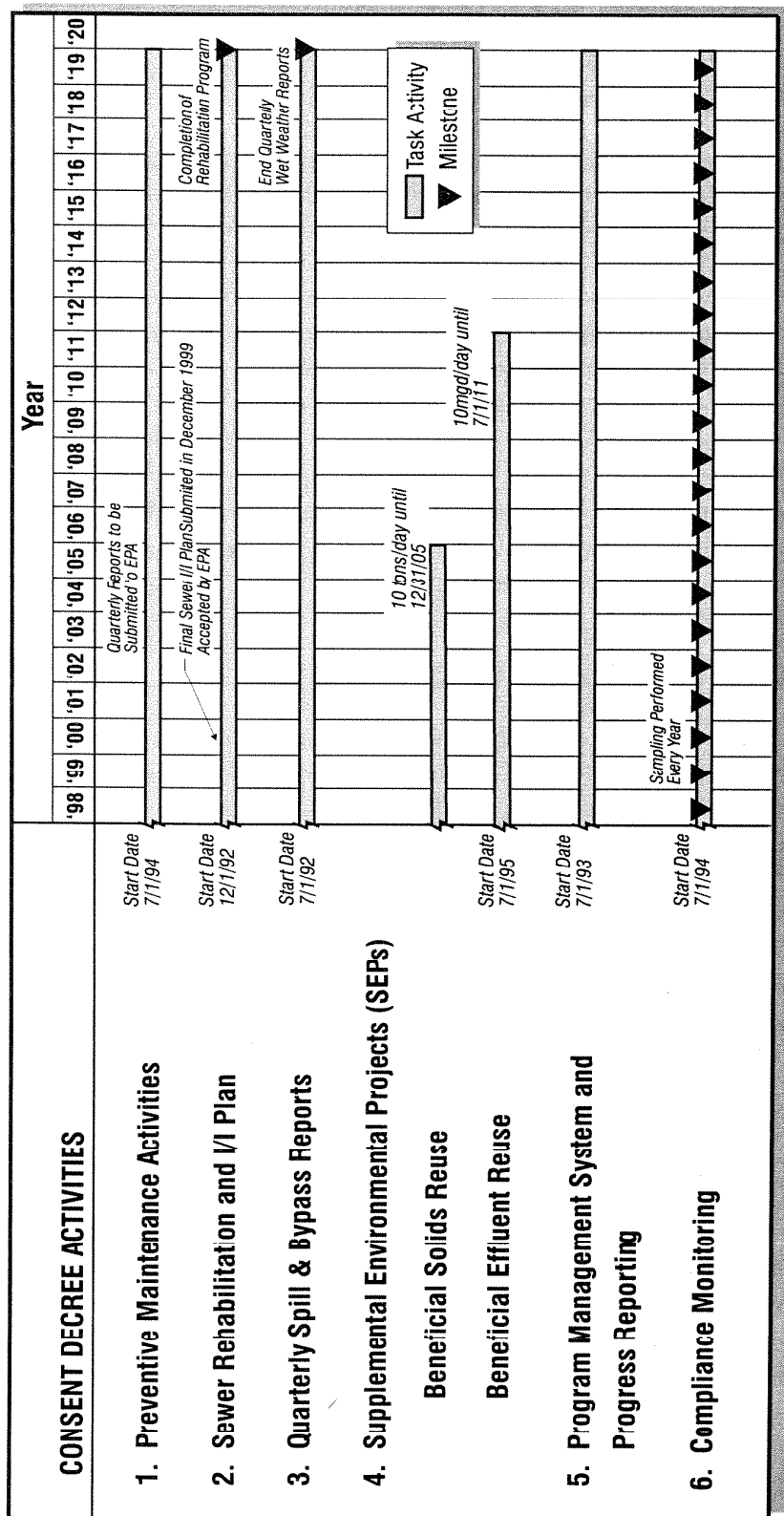
### ***Waimanalo***

The Waimanalo basin has a population of approximately 9,200 and is served by the Waimanalo WWTP. Built in the 1970s, the Waimanalo WWTP currently treats 0.57 mgd of wastewater flow and has a secondary treatment capacity of 0.70 mgd.

Although the Central Oahu, North Oahu (East), North Oahu (West), Waianae, and Waimanalo basins comprise the majority of the geographical area of the island, the population density is much lower in comparison to the East and West Mamala Bay and the Kailua/Kaneohe/Kahaluu basin areas. The combined population of these five basin areas is approximately 124,800, which is approximately 15 percent of the total population of Oahu. The total design capacity of the WWTPs in these five basin areas is approximately 8.9 mgd and the current wastewater flow is approximately 5.9 mgd.

## **2.5 COMPLIANCE WITH DISCHARGE REQUIREMENTS AND CONSENT DECREES**

The City and County of Honolulu highly values a clean environment. The Department has worked with the community, the EPA, and the State of Hawaii Department of Health to develop several consent decrees. The consent decrees reflect agreed upon actions to meet the objectives of the City and County of Honolulu, the EPA, and other major participants for improvements to the existing wastewater systems. The consent decrees confirm the overall direction and schedule for the wastewater management program and are supported by the specific activities and actions developed through the facility planning efforts in recent years. A summary of the 309 consent decree milestones and associated due dates is presented in Figure 3. A summary of the four outstanding consent decrees and major objectives is presented in Table 4.



**Figure 3**  
**309 CONSENT DECREE**  
**MILESTONES SCHEDULE**  
 CITY AND COUNTY OF HONOLULU

<b>Table 4 Summary of Consent Decree Objectives</b> <b>City and County of Honolulu</b> <b>Department of Environmental Services</b>
<b>Honouliuli Consent Agreement (June 1993) – Completed</b> <ul style="list-style-type: none"> <li>• Provide construction of secondary treatment facilities for flows that will be reused.</li> </ul>
<b>309 Consent Decree (May 1995)</b> <ul style="list-style-type: none"> <li>• Revise and implement the City and County of Honolulu's pretreatment program – Completed</li> <li>• Establish a maintenance and sewer replacement/rehabilitation schedule to reduce and prevent sanitary sewer overflows (SSOs)</li> <li>• Develop beneficial reuse program for both wastewater and biosolids</li> </ul>
<b>Kailua/Kaneohe Consent Decree (August 1995)</b> <ul style="list-style-type: none"> <li>• Allow participation of stakeholders in joint development Facilities Plan for Kailua Regional WWTP and Kaneohe WWPTF</li> <li>• Construct and operate pilot UV disinfection facility at Kailua Regional WWTP – Completed</li> <li>• Monitor water quality of the Kailua/Kaneohe watersheds in cooperation with the Kailua Bay Advisory Council</li> </ul>
<b>Wahiawa Consent Decree (March 1998)</b> <ul style="list-style-type: none"> <li>• Provide a long-term solution for effluent disposal from Wahiawa WWTP - Completed</li> <li>• Improve reservoir water quality</li> <li>• Provide resource conservation through wastewater reclamation</li> </ul>

Each of the WWTPs operated by City and County of Honolulu are governed by a National Pollutant Discharge Elimination System (NPDES) Permit, a State Department of Health - Underground Injection Control Permit, or by Consent Decree.

Seven out of eight WWTPs are owned by the City and County of Honolulu and operated by the Department. All City and County-owned WWTPs are currently meeting national and state discharge requirements except for the Sand Island WWTP. The eighth WWTP, the Waimanalo WWTP, is owned by the State of Hawaii and operated by the Department, and has not consistently met permit requirements as discussed later in this section. A summary of the wastewater treatment facilities permit requirements, compliance history, and potential changes in permit conditions are presented in Table 5.

**Table 5 Discharge Requirements and Compliance History  
City and County of Honolulu  
Department of Environmental Services**

Facility	Permit Type	Average Design Flow (mgd)	Approx. Current Flow (mgd)	Discharge Limit (mg/L)		Existing Treatment Level	Potential Changes in Discharge Requirements	Consistently Meets Requirements?
				BOD	TSS			
Sand Island WWTP	NPDES	82	67.6	116	69	Primary	---	Not Consistent <sup>(2)</sup>
Honouliuli WWTP	NPDES	38	26.8					Yes
Up to 13 mgd				30	30	Secondary	---	
13 to 36 mgd				160	95	Primary	---	
Pa'alaa Kai WWTP	UIC EPA	0.14	0.12	30	30	Secondary	---	Yes
Waianae WWTP	NPDES	5.2	3.2	30	30	Secondary	---	Yes
Wahiawa WWTP	EPA Consent Decree	2.5	1.89	30	30	Secondary	Pending project direction	Yes
Kailua Regional WWTP	NPDES	15.25	13.0	30	30	Secondary	---	Yes
Kahuku WWTP	UIC EPA	0.4	0.13	30	30	Secondary	---	Yes
Waimanalo WWTP <sup>(1)</sup>	UIC EPA	0.7	0.57	30	30	Secondary	---	Not Consistent <sup>(3)</sup>

**Notes:**

- (1) Owned by State of Hawaii, operated by the City and County of Honolulu.
- (2) In 1999/2000, the Sand Island WWTP did not consistently meet the 30 percent BOD reduction requirement.
- (3) The effluent concentration of BOD for the Waimanalo WWTP has slightly exceeded 30 milligrams per liter (mg/L) in the past.

The Sand Island WWTP is the largest of the facilities owned and operated by the City and County of Honolulu. The original 1990 NPDES permit for Sand Island WWTP was a waiver permit which allowed discharge of less than secondary treated effluent into the deep ocean. The permit had effluent discharge limits for biological oxygen demand (BOD) and total suspended solids (TSS) which were met. Although the 1987 Clean Water Act specified a minimum 30% removal of BOD and TSS for waiver dischargers, these limits were not included in the 1990 permit because of a grandfathering provision. A number of operating and process modifications were made throughout the last few years to accomplish this level of treatment. These optimizations resulted initially in achieving compliance with the informal BOD removal standard of 30 percent in 1995. In addition, a new chemical treatment facility was installed in 1995 to assist in meeting the 30 percent BOD removal requirement.

The NPDES waiver permit was reissued in September 1998 with 30% removal limits for BOD and TSS in addition to effluent discharge limits. Recently, the Sand Island WWTP plant has experienced difficulties in meeting the 30 percent BOD reduction requirement. This is partially due to the aging condition of the primary treatment and solids dewatering unit operations. Changes in influent waste characteristics have also contributed to the challenge of meeting the 30% BOD reduction. These unit operations are scheduled for upgrade and improvement in the first few years of the 2001-2005 CIP. The 2001-2005 CIP



projects also implement the modifications required to fix other existing deficiencies, and to accommodate planned growth, as well as projects required by and identified in the permit.

The Waimanalo WWTP is a State-owned facility that is operated by the Department under agreement. It accounted for only 0.5 percent of the total 1997 wastewater flow. The plant exceeded monthly average permit concentrations for BOD in June of 1997 and for total suspended solids (TSS) in July of 1997. Periodically, high influent BOD and TSS concentrations have been attributed to high infiltration/inflows (I/I) in the collection system, the absence of flow equalization facilities, and highly concentrated industrial discharges. Consequently, the original 1.1 mgd design capacity has been re-rated to 0.7 mgd. Planning has been completed for modification and expansion of the facility to correct these minor problems. Initial construction funding is in the current State budget for 2003.

The Honouliuli WWTP NPDES Permit provides for up to 38 mgd of primary treatment and up to 13 mgd of secondary treatment. A privately owned 13 mgd tertiary plant was built on site in 2000 for providing recycled water for irrigation and industry. The City and County of Honolulu has entered into a consent decree with the EPA and is on schedule for implementing the required reuse supplemental environmental project. The state Department of Health has issued an additional permit for the Honouliuli WWTP for private operation of the recycled water facility.

The Wahiawa WWTP currently does not have a State Permit to discharge secondary effluent to the Wahiawa Reservoir. The plant is covered in the interim by a Consent Decree to increase the quality of water discharge from Wahiawa WWTP. The increased level of treatment of effluent discharged to the reservoir is to allow for beneficial use of the effluent both in the reservoir and by downstream agricultural users. Projects are under construction which will provide for a higher level of treatment of effluent from the Wahiawa WWTP, and thereby improve the water quality of the reservoir. On completion of construction, a new discharge permit is expected.

The Mililani WWTP was abandoned in the 1980s and raw wastewater is now diverted to the Honouliuli WWTP. Currently, raw wastewater passes through the abandoned plant site and flows by gravity and force main to the Honouliuli WWTP approximately 10 miles away. This diversion was made as a part of the regionalization by the City and County of Honolulu to reduce the number of wastewater treatment facilities.

## **2.6 CAPITAL PROGRAM PLANNING AND FUTURE DIRECTION**

The Department has prepared a 20-year CIP, which incorporates the results of several facility plans and preliminary designs for various wastewater facilities. The CIP was developed with a number of financial and engineering objectives in mind, including minimizing life cycle costs versus capital costs, improving project delivery cycles, increasing organizational effectiveness, and targeting staff reductions through attrition. It includes facility plans and preliminary designs

for most of the major wastewater treatment facilities, and identifies collection system and piping improvements, which represent a majority of the capital improvement projects.

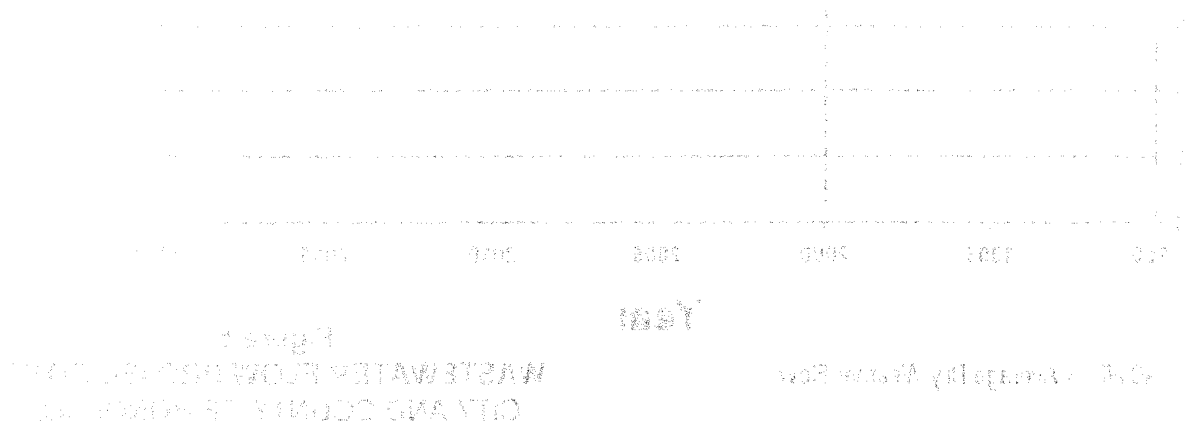
The City and County of Honolulu has identified several capital improvement projects to meet consent decree requirements. The 2001-2005 CIP projects are recognized as the highest priority projects for meeting consent decree requirements, replacing severely corroded pipe, and for satisfying regulatory requirements. Information on the need for the 2001-2005 CIP projects, descriptions and estimated costs, and implementation schedules follow in Chapter 3. The long-term facilities needs, project descriptions, costs and implementation schedules are summarized in Chapter 4.

## 2.7 WASTEWATER FLOW PROJECTIONS

The wastewater flow and strength projections are based on the anticipated growth rates included in the City and County of Honolulu's General Plan. Growth is not a significant factor in driving the overall need for 20-year CIP projects. Only 14 percent of the 20-year CIP costs are associated with projects required to accommodate growth. Growth for the total population of the City and County of Honolulu is presented in Figure 4 and is summarized by basin in Table 6. Wastewater flow projections through the year 2017 are presented in Figure 5.

As shown in Figures 4 and 5, the projected increase in population and associated wastewater flows are not significant over the 20-year planning period. Population growth is projected to average approximately 1 percent per year and associated wastewater flows are projected to increase by a similar percentage. The slight difference between projected population growth and wastewater flows is due to the planned reduction in unsewered areas with the conversion of cesspools to connect to the public sewage system. Also, for financial planning purposes, and to project revenues from new equivalent-single-family dwelling units (ESDUs) paying wastewater system facility charges, new connections, as shown in Figure 6, are conservatively projected to increase at a slower rate than General Plan population projections.

The majority of the population growth is expected to occur in the East and West Mamala Bay urbanized areas. In the next ten years, the Sand Island WWTP will require additional capacity in order to accommodate growth in the East Mamala Bay basin.



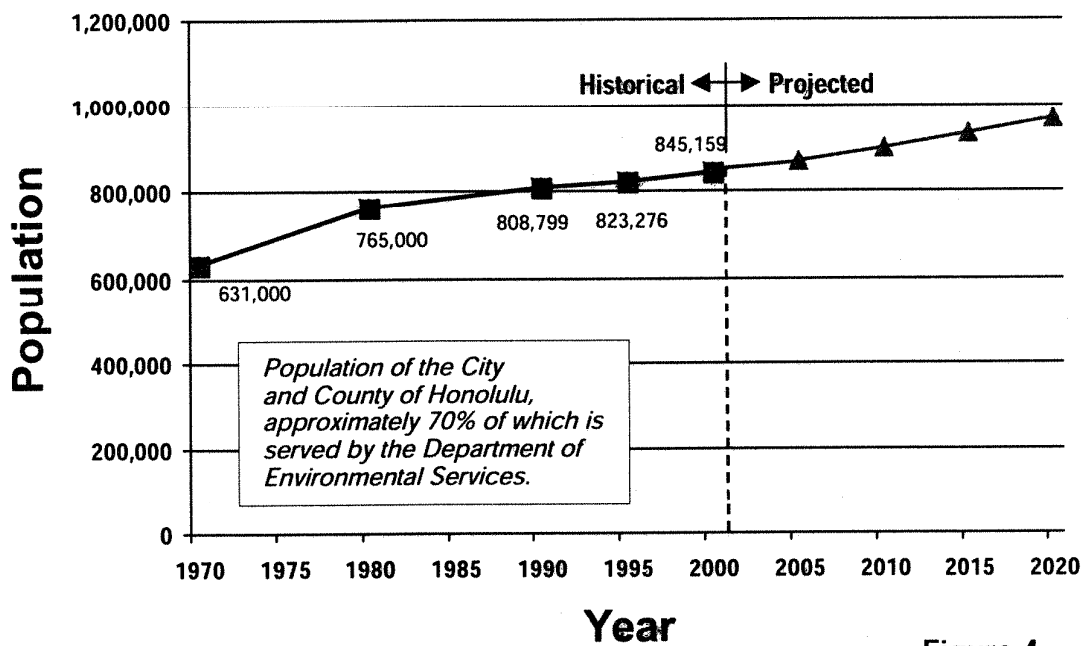
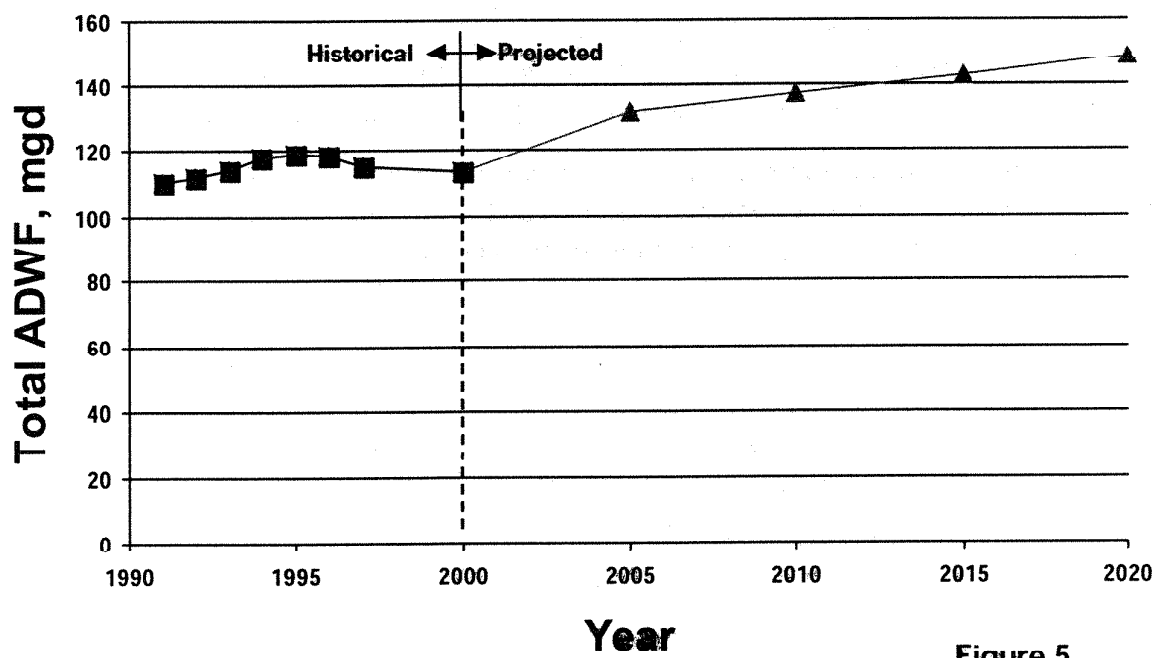
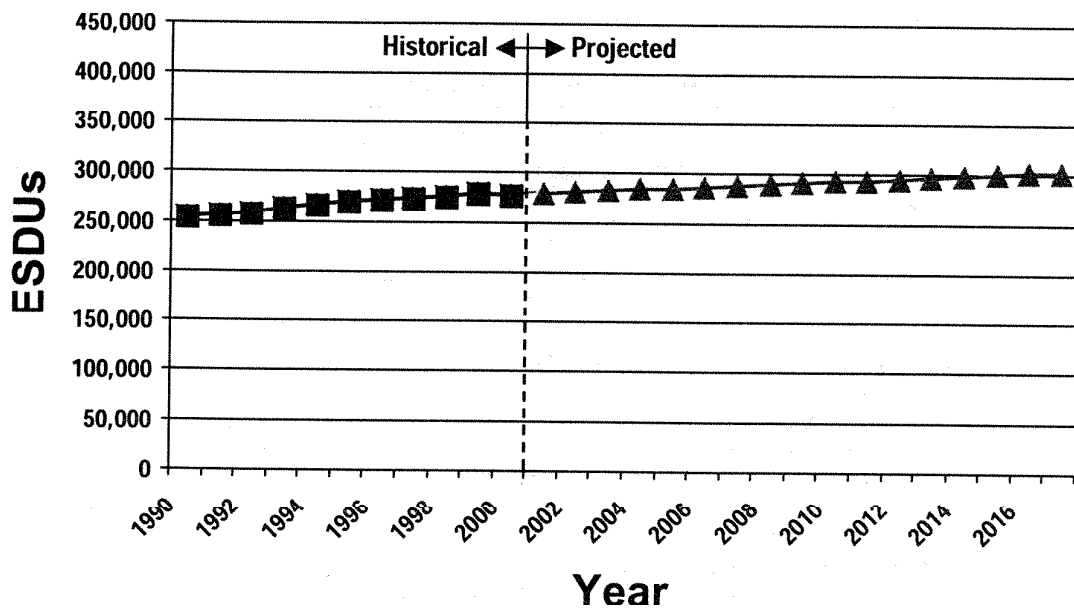


Figure 4  
HISTORICAL AND PROJECTED  
POPULATION  
CITY AND COUNTY OF HONOLULU



ADWF = Average Dry Weather Flow

Figure 5  
WASTEWATER FLOW PROJECTIONS  
CITY AND COUNTY OF HONOLULU



ESDU = Equivalent Single-Family Dwelling Unit

Figure 6  
ESDU GROWTH PROJECTIONS  
CITY AND COUNTY OF HONOLULU

<b>Table 6 Historical and Projected Resident Population By Basin<sup>(1)</sup> Oahu, 1990-2020</b> <b>City and County of Honolulu</b> <b>Department of Environmental Services</b>						
<b>Basin</b>	<b>1990</b>	<b>2000</b>	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
East Mamala Bay	380,157	374,366	385,303	402,731	421,828	434,250
West Mamala Bay	199,005	239,713	251,239	267,301	273,752	293,036
North Oahu (East/West) <sup>(2)</sup>	29,992	31,094	31,331	31,372	34,325	34,924
Waianae	37,411	39,271	40,635	41,094	41,336	42,183
Central Oahu	44,540	45,254	44,996	44,716	44,546	44,231
Kailua/Kaneohe/Kahaluu	108,639	106,300	105,502	104,738	108,812	109,214
Waimanalo	9,055	9,161	9,099	9,043	9,631	9,749
<b>Total</b>	<b>808,799</b>	<b>845,159</b>	<b>868,105</b>	<b>900,955</b>	<b>934,230</b>	<b>967,587</b>
<b>Notes:</b> (1) Population from Planning Department. Military bases are included (City and County of Honolulu Planning Department, 2000; City and County of Honolulu) (2) Includes population of Laie, which is currently served by a private sewer system operator, but which will be served by the City and County of Honolulu beginning in 2003.						

## CIP PROJECTS FOR FISCAL YEARS ENDING 2001 - 2005

This chapter addresses the CIP projects planned for the Fiscal Years Ending (FYE) 2001-2005, with particular emphasis on the major capital facility expenditures for wastewater management projects anticipated through FYE 2003. Other projects beyond FYE 2005 are addressed in Chapter 4.

### 3.1 NEED FOR THE PROJECTS

The 2001-2005 CIP projects were developed through a comprehensive planning process involving a review of facility needs throughout the island. During this review, prioritization criteria were developed and major projects were ranked. The prioritization criteria are summarized in Table 7. Non-discretionary prioritization criteria include safety and public health, permit and regulatory compliance, consent decree activities, and expansion-related needs, while discretionary criteria include reliability and preventative-maintenance related needs.

<b>Table 7    Prioritization Criteria</b> <b>City and County of Honolulu</b> <b>Department of Environmental Services</b>	
Non-Discretionary	<ul style="list-style-type: none"> <li>• Safety and Public Health</li> <li>• Permit Requirements and Regulatory Compliance</li> <li>• Consent Decree</li> <li>• Expansion</li> </ul>
Discretionary	<ul style="list-style-type: none"> <li>• Reliability</li> <li>• Improvement/Preventative Maintenance</li> </ul>

The 2001-2005 CIP projects fall into two general categories: collection system, and wastewater treatment plant. The majority of the projects scheduled for this period are collection system projects, including pipelines and pump stations. The collection system improvement projects are needed to replace or rehabilitate corroded pipe, to reduce infiltration/ inflow, and to extend service to unsewered areas. Replacement of severely corroded pipe will reduce infiltration/inflow during wet weather events, and will result in lower operation and maintenance costs for both the collection systems and associated WWTPs. The collection system projects are described below in Section 3.2.

Treatment plant improvement project expenditures anticipated during FYE 2001-2005 are needed to upgrade existing facilities, to satisfy regulatory requirements, and to improve the reliability of the facilities in handling peak wet weather flows. WWTP improvement projects are described in Section 3.3.

The general locations of the major CIP projects to be constructed in the first three years, from July 2001 to June 2003, are shown in Figure 7.

### **3.2 COLLECTION SYSTEM PROJECTS**

The City and County of Honolulu plans on beginning numerous collection system design and construction projects as well as continuing existing projects between fiscal years ending 2001-2005. The City and County of Honolulu has provided an allotment for smaller replacement projects which can be approved quickly. The total expenditures for these projects through the year 2005 are \$368.4 million, with an expected \$175.5 million to be expended within the first three years and \$192.9 million to be spent in the remaining two years.

Collection system projects between fiscal years ending 2001 and 2005 include the Wilhelmina Rise Sewer Rehabilitation, the Kalaheo Avenue Sewer Reconstruction, and many other projects including ones that stem from the I/I Plan.

### **3.3 WASTEWATER TREATMENT PLANT IMPROVEMENT PROJECTS**

The Department has planned for the design and/or construction of 11 major WWTP improvement projects, with all WWTP projects totaling \$403.6 million between fiscal years ending 2001-2005. Within the first three years, \$110.4 million is to be expended and \$293.2 million is to be expended in the remaining two years. The most significant of these projects are the Sand Island WWTP Unit 1 Phase 2A Project, Sand Island WWTP Primary Treatment Expansion, and Sand Island WWTP Disinfection and Effluent Pump Station Projects.

### **3.4 ONGOING CAPITAL PROGRAM**

The Department's CIP in fiscal years ending 2001-2005 includes the new projects mentioned and numerous projects initiated in prior years.

Major ongoing projects include a number of the City's largest pump facilities, including:

- Ala Moana Wastewater Pump Station - Modification and expansion of the facility to accommodate future increases in peak flows to nearly 200 mgd.
- Hart Street Wastewater Pump Station and Sewer Force Main - Reliability and capacity upgrades of the City's second largest pump station and the addition of a new force main to parallel the existing aging force main.

Examples of other major ongoing projects include:

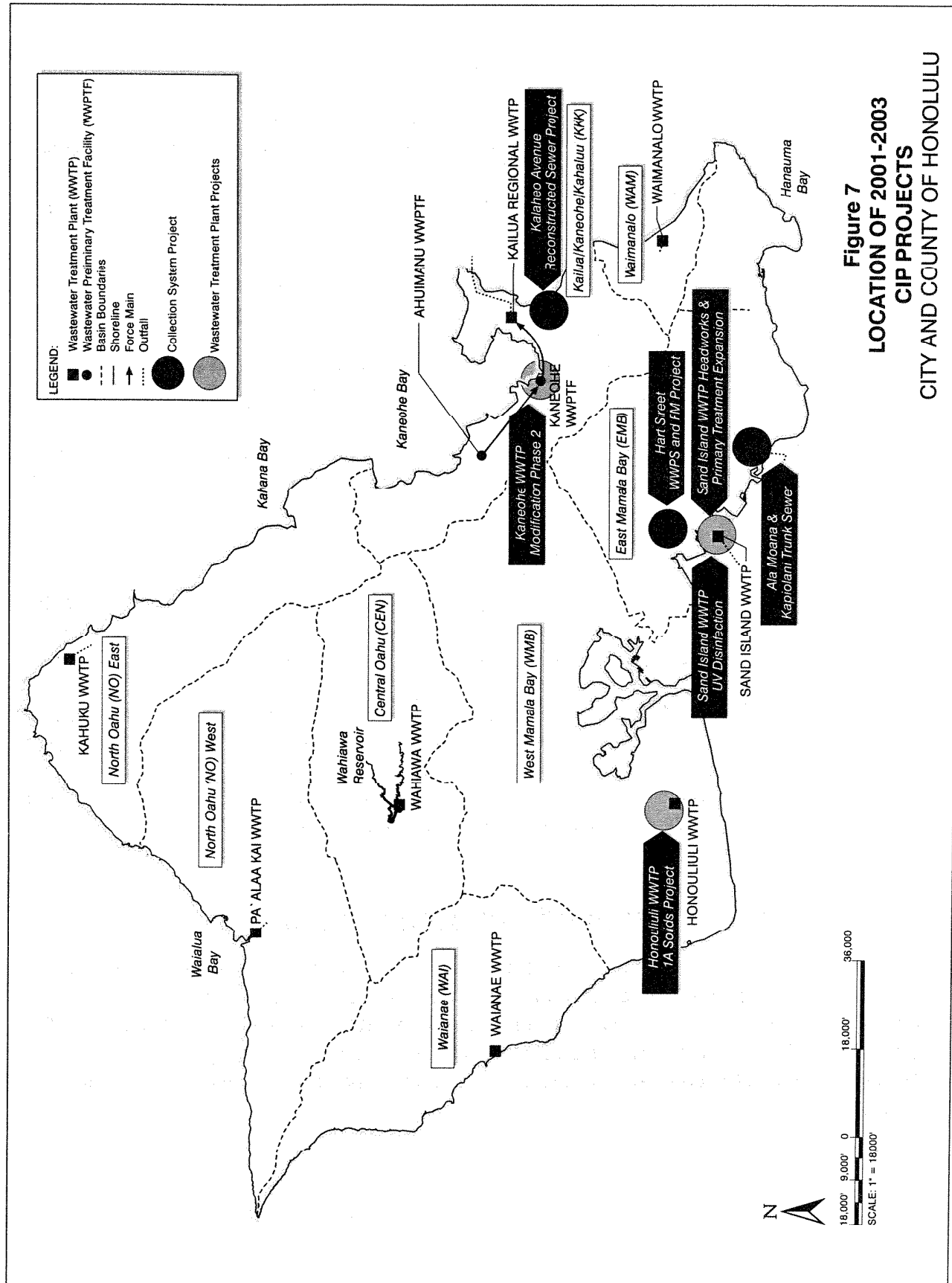
- Sand Island WWTP - Upgrade of the interiors of the clarifiers of Hawaii's largest wastewater treatment plant.

### **3.5 PROJECT MANAGEMENT**

The Department has proven its capability in delivering projects on time and within budget. The Department's project delivery team has received several awards, including those awarded for the Nimitz Highway Relief Sewer Project:

- American Society of Civil Engineers, Hawaii Section, 1996 Outstanding Achievement Award.
- American Public Works Association, Hawaii Chapter, 1997 Project of the Year (Large Environmental).
- American Consulting Engineers Council, National Honor Award.

Examples of the Department's proven capabilities in meeting project milestones are listed below.





## **Waianae WWTP Secondary Treatment Upgrade**

The Waianae WWTP was originally a 5.2 ADWF primary treatment plant which discharged its wastewater through an ocean outfall. During reapplication for the permit for the plant in the early 90s, the waiver of secondary treatment was denied and the plant was required to upgrade to secondary treatment. Design was completed in 1993 and construction was completed on time in 1995 and within the programmed budget of \$25 million. In 1996 and 1997, the facility received the Gold Award from the AMSA.

## **Spill Prevention/Spill Containment Plan**

As part of the original 309 consent decree, the City and County of Honolulu was required to develop a long-term strategy for the reduction of dry and wet weather spills. The spill prevention plan was to focus its effort on the pump stations and treatment plants and on proposed enhancements to the Wastewater Information Management System to more efficiently develop schedules for the maintenance of gravity sewer lines. The plan was submitted to the EPA in early 1995 and accepted in April 1995.

## **Wastewater Information Management System (WIMS)**

The base hardware and software installation for WIMS was completed in 1994 and is linked to the City's geographical information system for mapping of the sewer lines. This requirement was part of the 309 consent decree. Despite being installed, the system still required implementation from taking appropriate field data to optimizing the scheduling system. Internally developed procedures and correlation studies have progressed to reflect the following improvements: Field data efficiency (usable data) has improved from 43 percent in 1992 to 97 percent in 1997 and correlation studies on pipe conditions to pipe characteristics have led to a more optimized maintenance and replacement schedule. The WIMS system for optimizing sewer line maintenance and replacement schedules continues to improve. The maintenance management software component was replaced in the this year.

## **3.6 SUMMARY OF ESTIMATED PROJECT COSTS**

The summary of costs for 2001-2005 CIP projects by project category is presented in Table 8. These costs include planning, design, and construction costs as well as all engineering, administrative, and legal expenses. Proceeds of the Series 2001 Bonds will fund \$125 million of the 2001-2005 CIP projects, with the balance to be primarily met from existing funds of the Department, new SRF loans, annual revenues, and from the proceeds of future revenue bond issues.

Table 8 Summary of Estimated CIP Project Expenditures, 2001-2005 City and County of Honolulu Department of Environmental Services							
(Thousands of Dollars) <sup>(1)</sup>							
Project	00/01	Fiscal Year				Total Expenditures	
		01/02	02/03	03/04	04/05	00/01-02/03	00/01-04/05
<b><u>Collection System Projects</u></b>							
Consent Decree Projects	\$20,011	\$25,912	\$40,105	\$41,477	\$46,333	\$86,028	\$173,839
Other Non-Discretionary Projects	\$18,056	\$24,294	\$23,497	\$28,860	\$28,096	65,847	122,803
Other Discretionary Projects	\$7,381	\$6,882	\$9,349	\$17,785	\$30,337	23,611	71,733
Subtotal: Collection System	\$45,448	\$57,088	\$72,951	\$88,122	\$104,767	\$175,486	\$368,376
<b><u>Treatment Plant Projects</u></b>							
Consent Decree Projects	\$9,303	\$4,135	\$2,861	\$1,014	\$428	\$16,298	\$17,740
Other Non-Discretionary Projects	\$5,013	\$19,881	\$66,642	\$135,647	\$149,430	91,536	376,613
Other Discretionary Projects	\$577	\$344	\$1,612	\$3,414	\$3,320	2,533	9,266
Subtotal: Treatment Plant	\$14,892	\$24,359	\$71,115	\$140,075	\$153,179	\$110,367	\$403,620
Total CIP	\$60,340	\$81,447	\$144,067	\$228,197	\$257,945	\$285,854	\$771,996
Notes:							
(1) All costs are presented in inflated dollars, assuming 3% inflation per year, beginning in Fiscal Year 02/03.							

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**FUTURE PROJECTS**

The City and County of Honolulu Department of Environmental Services has identified facility needs through the year 2017 for the eight major WWTPs and associated collection system facilities. Cost estimates and implementation schedules for the projects have been developed for the planning period. This chapter provides an overview of the 20-year capital improvement needs of the Department.

## **4.1 LONG-TERM EXPANSION AND REHABILITATION NEEDS**

A summary of the estimated project costs for each of the wastewater basins for the 20-year period is presented in Table 9. These include the 2001-2005 CIP projects as well as all other projects identified for the 20-year planning period. Table 9 also lists the distribution of costs among project categories. The two major project categories are collection system improvements, and WWTP improvements. Figure 8 shows the 20-year CIP breakdown by project category for each basin.

A summary of the 20-year CIP total costs (in 2001 dollars) by project category is shown in Figure 9. Approximately 69 percent of the total project costs are associated with collection system improvements, and 31 percent with WWTP improvements.

A summary of the 20-year CIP total cost (in 2001 dollars) by primary project purpose is presented in Figure 10. As shown in Figure 10, approximately 81 percent of the total costs are associated with non-discretionary projects that must be completed in order to satisfy consent decree, permit/regulatory, expansion, and safety/public health requirements. The remaining 19 percent of the total costs are associated with discretionary projects that have been identified to improve wastewater treatment and collection systems. The Department has identified these discretionary projects in order to address reliability, improvement, and preventive maintenance concerns before they become non-discretionary projects.

### **Collection System Improvements**

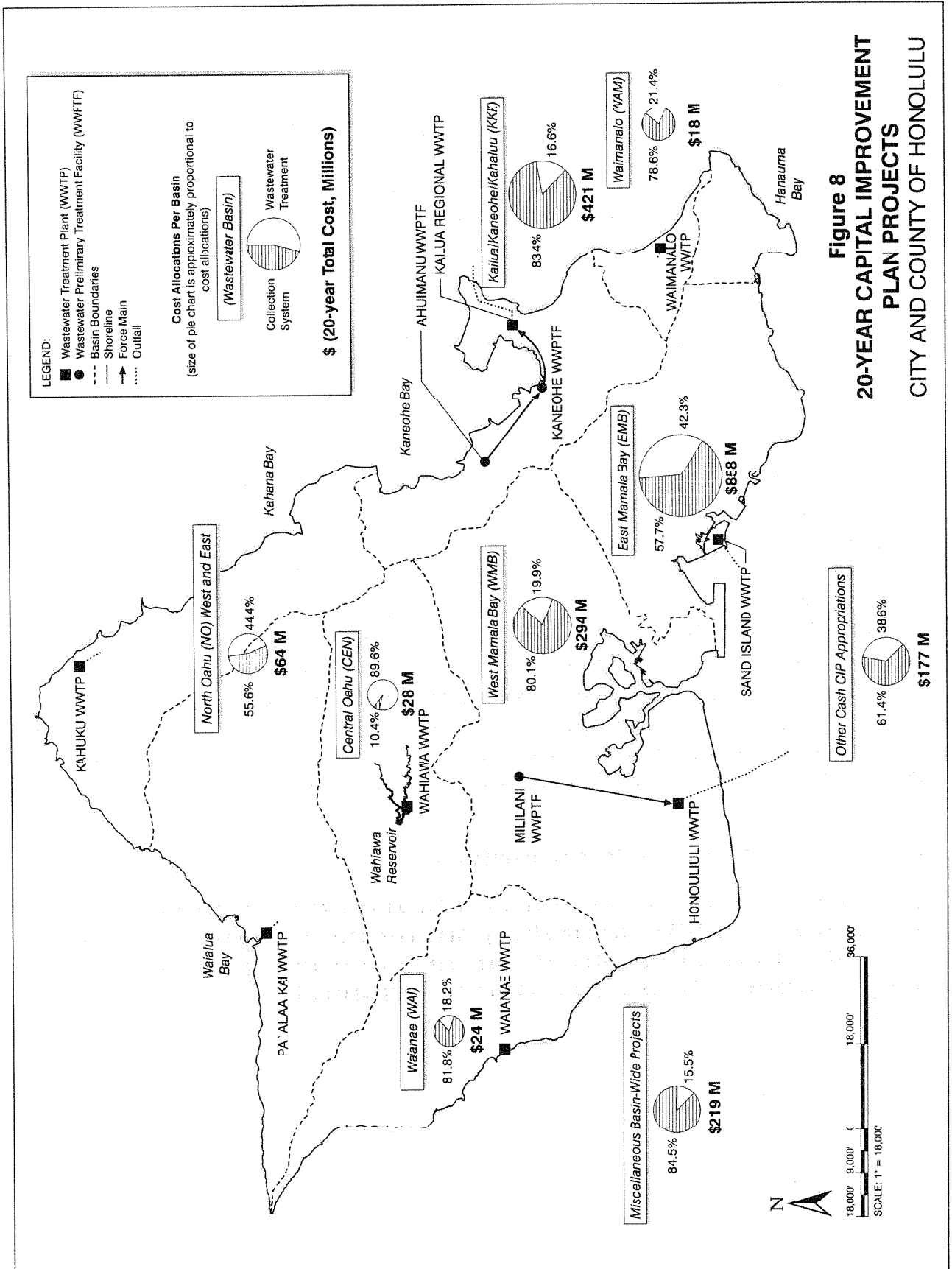
As shown in Table 9, \$1.45 billion (approximately 69 percent) of the 20-year CIP total costs are associated with improvements to the collection system. Some pipelines in the existing collection system are approaching the end of their useful lives. This is due to the fact that the major pipeline facilities were installed 40 to 100 years ago, and the piping system is in a harsh underground environment. The harsh environment exists because of the saline content of the high groundwater table, and because of the relatively flat slopes and tropical temperatures which accelerate sulfide generation and corrosion rates.

<b>Table 9 Summary of 20-Year Expenditures (FYE 1998 – FYE 2017)</b> <b>City and County of Honolulu Department of Environmental Services</b> <b>(Thousands of Dollars)</b>			
Basin	Project Category		20-Year Total
	Collection System	Treatment Plant	
East Mamala Bay	\$494,865	\$363,233	\$858,098
West Mamala Bay	235,840	58,446	294,286
North Oahu (East & West)	35,847	28,615	64,461
Kailua/Kaneohe/Kahaluu	350,834	69,872	420,706
Waianae	19,717	4,379	24,096
Central Oahu	2,924	25,134	28,059
Waimanalo	13,792	3,750	17,541
Miscellaneous Projects	186,157	32,948	219,105
Other CIP Cash Appropriations	108,590	68,329	176,919
Total: CIP	\$1,448,566	\$654,706	\$2,103,271
Notes: FYE = Fiscal Year End All costs are presented in 2001 dollars.			

The deteriorated condition of the collection system has resulted in excessive infiltration, inflow, and collection system overflows during wet weather events. This results in increased operation and maintenance costs for both the collection system and treatment plant facilities. The consent decree action items address these issues through a comprehensive rehabilitation program beginning with the high priority projects. The 2001-2005 CIP projects include most of the highest priority collection system projects.

### **Wastewater Treatment Plants Improvements**

The three major wastewater treatment plants are the Sand Island WWTP, the Honouliuli WWTP, and the Kailua Regional WWTP. Separate facility plans have been completed for each of these major facilities. The facilities plans identify future needs for system improvements and to accommodate growth. Other facility plans are currently being updated.



**Figure 8**  
**20-YEAR CAPITAL IMPROVEMENT**  
**PLAN PROJECTS**  
**CITY AND COUNTY OF HONOLULU**

20-year expenditure total = \$2.1 Billion

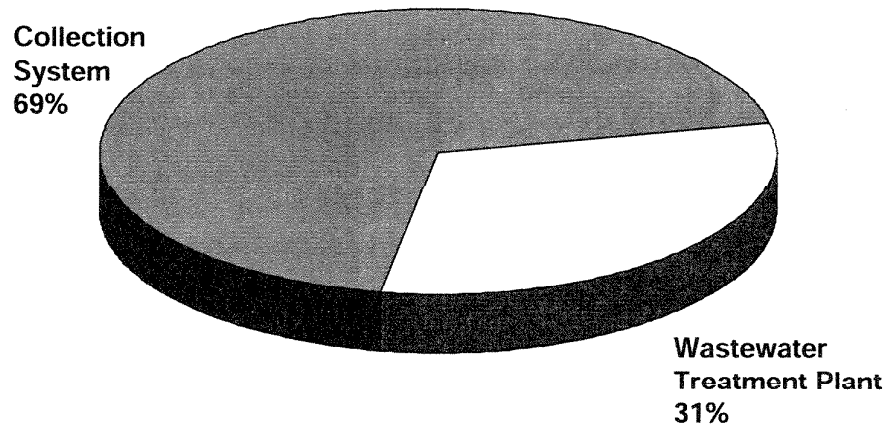


Figure 9  
20-YEAR CIP BY PROJECT CATEGORY  
CITY AND COUNTY OF HONOLULU

20-year expenditure total = \$2.1 Billion

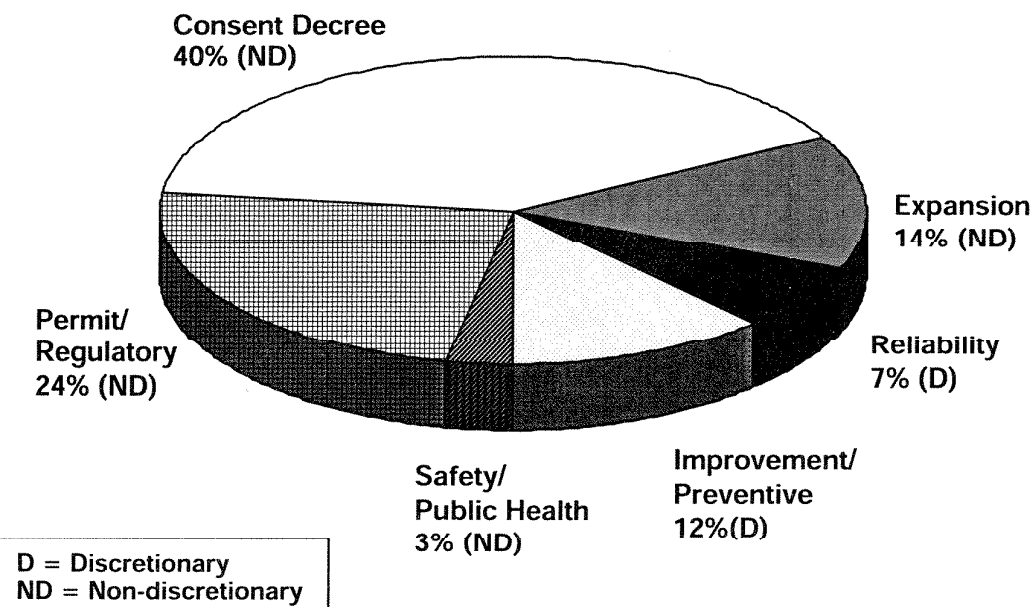


Figure 10  
20-YEAR CIP BY PROJECT MAIN PURPOSE  
CITY AND COUNTY OF HONOLULU

A facilities plan layout for the Sand Island WWTP is shown in Figure 11. The major projects to be completed within the 20-year planning horizon for the plant include:

- Construction of higher capacity headworks to replace the existing headworks.
- Modifications to existing primary clarifiers, and addition of new primary clarifiers.
- Expansion of the existing sludge conditioning system, or replacement of the system with new anaerobic digesters and power generation facilities, or implementation of "in-vessel" composting.
- New disinfection facilities.

A facilities plan layout for the Honouliuli WWTP is shown in Figure 12. The major projects identified for the plant include:

- Process upgrades to allow for beneficial reuse of wastewater.
- Expansion of the solids handling facilities to accommodate the recently completed plant expansion.

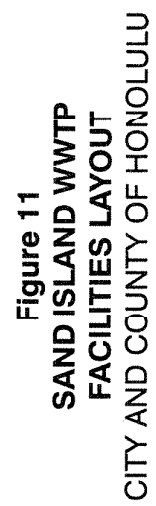
A facilities plan layout for the Kailua Regional WWTP is shown in Figure 13. The major facility project requirements identified for the planning horizon for the Kailua Regional WWTP include:

- Pump station facility improvements.
- Wet weather handling facility improvements.

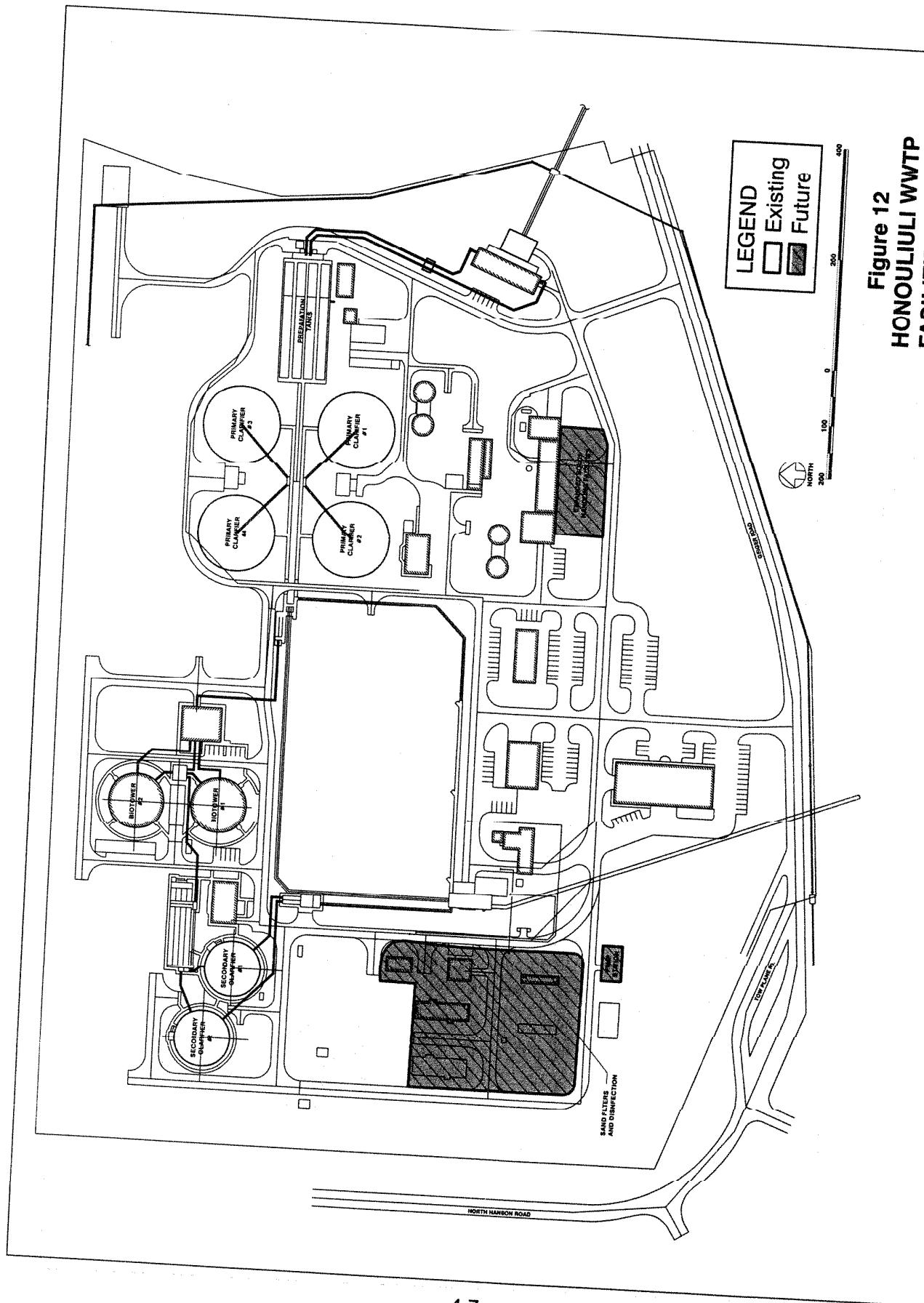
## **4.2 COST OF FUTURE PROJECTS**

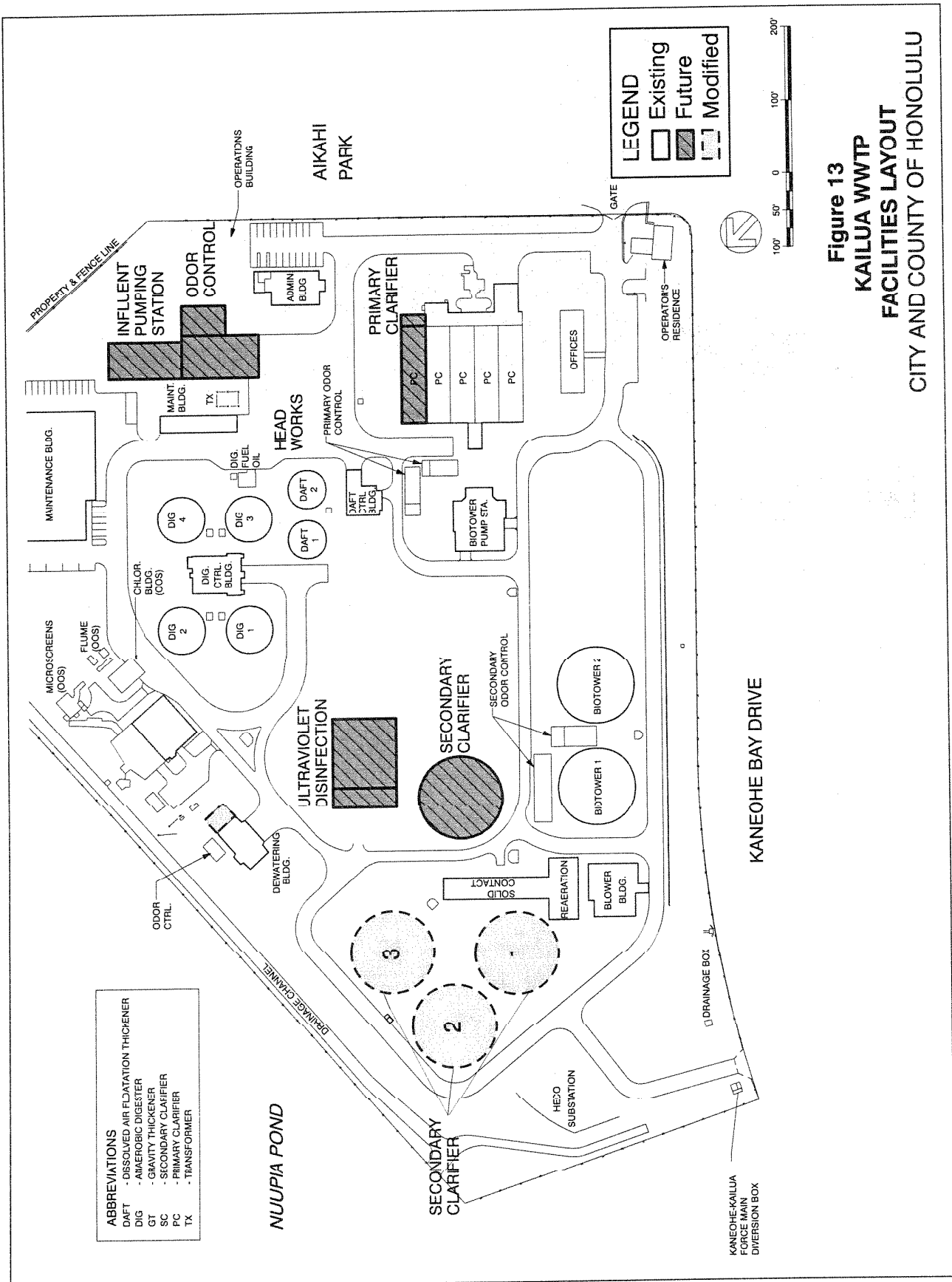
Estimated capital project costs for future facilities have been developed for each of the eight wastewater basins. The capital cost estimates include land acquisition, planning, design, construction, construction management, and all other costs required to deliver a completed project.

A summary of the historical and projected annual capital expenditures is shown in Figure 14. As shown in Figure 14, there has been an increasing trend in annual capital project expenditures from 1998 through 2000. Capital project expenditures are anticipated to increase more significantly through 2017. This increasing trend is the result of several considerations. The first is a greater proportion of project expenditures in the past were for planning and design as shown in Figure 14. In the future, projected capital expenditures are anticipated to be primarily attributable to construction, because planning and design have already been completed for a substantial number of the 20-year CIP projects. There is a large increase in capital expenditures in 2004 and 2005. This is due in part to the rehabilitation and improvement requirements set forth in the new Sand Island WWTP Permit.

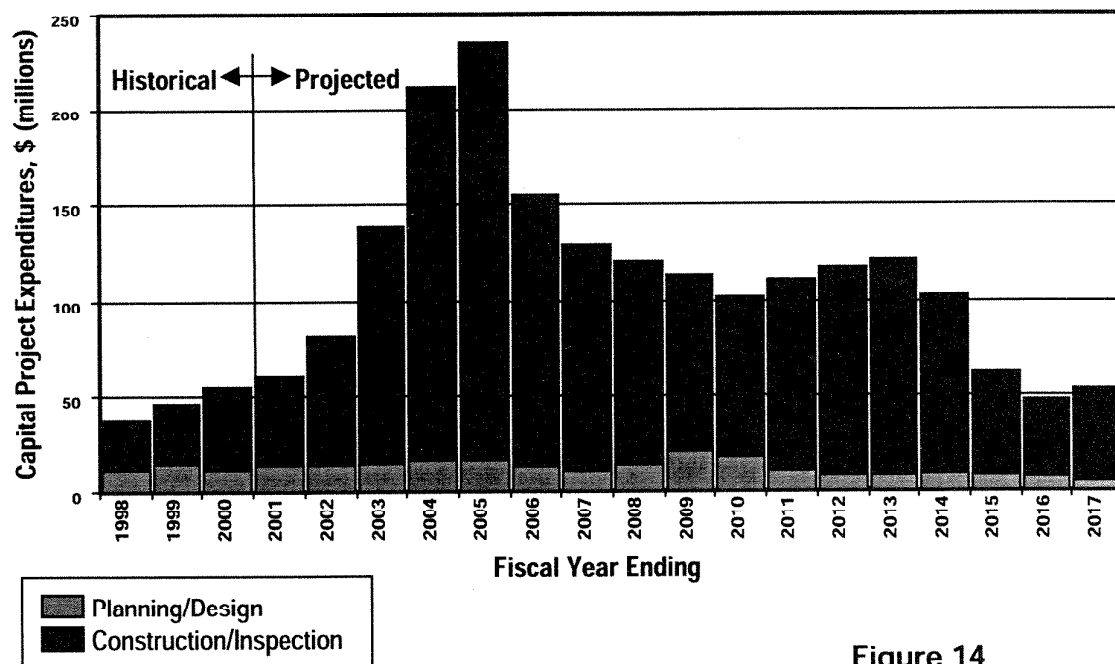








**Figure 13**  
**KAILUA WWTP**  
**FACILITIES LAYOUT**  
**CITY AND COUNTY OF HONOLULU**



*All future costs are shown in 2001 dollars.*

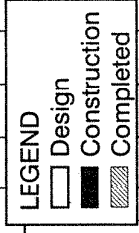
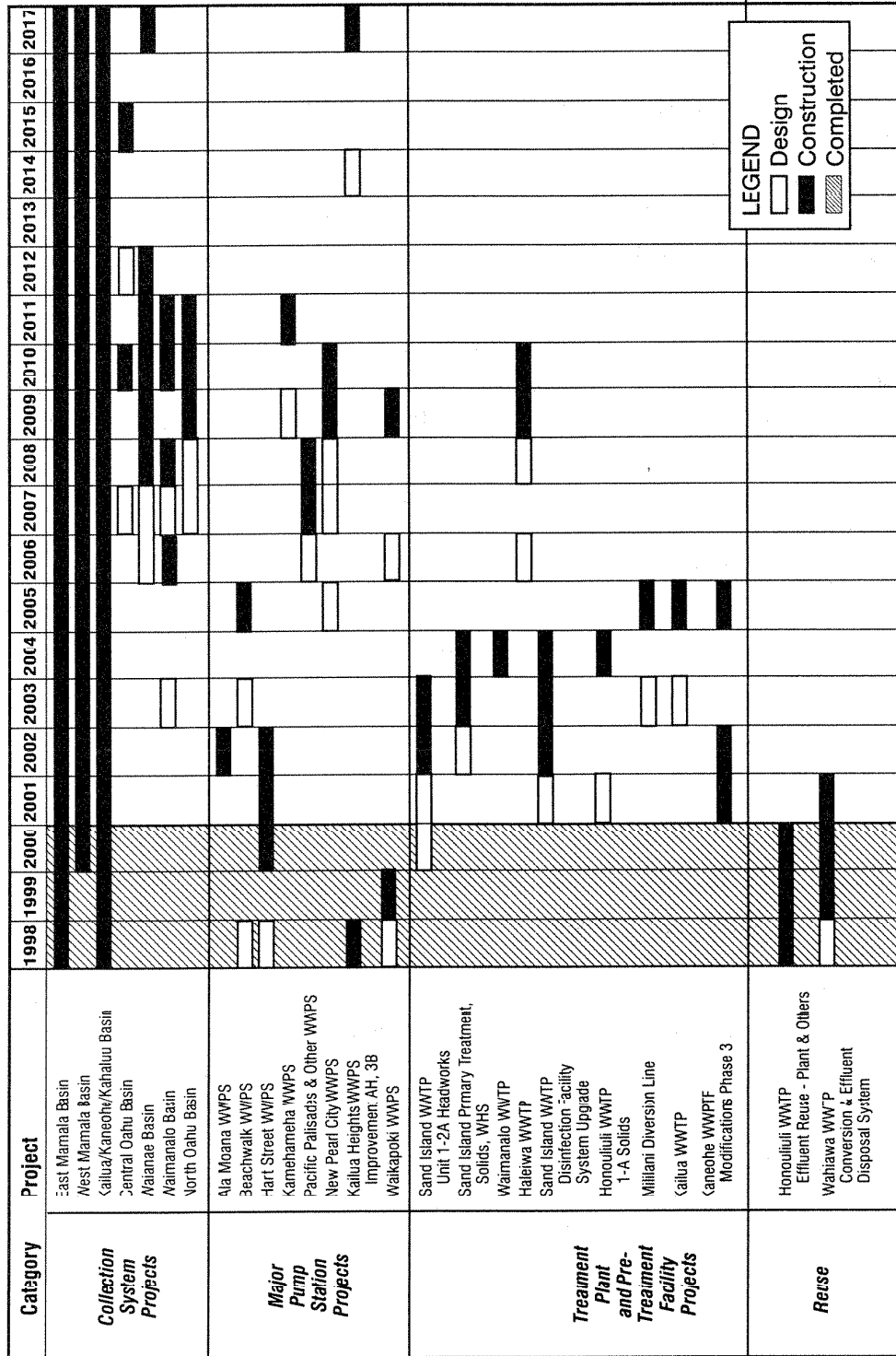
**Figure 14**  
**HISTORICAL AND PROJECTED**  
**CAPITAL PROJECT EXPENDITURES**  
**CITY AND COUNTY OF HONOLULU**

### **4.3 TIMING OF FUTURE PROJECTS**

The implementation schedule for the 20-year CIP projects is presented in Figure 15. This implementation schedule shows the timing of major projects necessary to replace and rehabilitate deteriorated pipes, to accommodate increased wastewater flows and loadings due to anticipated growth, and to meet consent decree scheduled activities. As shown, some of the current CIP projects are already funded through planning and design. Others will be funded from the proceeds of the Series 2001 bonds, the existing capital reserves, and future bond issues. Funding for the projects is discussed in Chapters 5 and 6.

### **4.4 GROWTH RATE CONSIDERATIONS**

Projects associated with population growth and service expansion account for only 14 percent of the 20-year CIP total costs. Most of the 20-year CIP projects are driven by other factors such as consent decree requirements, rehabilitation and replacement of existing aging infrastructure, and public safety.



**Figure 15**  
**20-YEAR PROJECT**  
**IMPLEMENTATION SCHEDULE**  
**CITY AND COUNTY OF HONOLULU**

## CURRENT AND FUTURE SEWER SERVICE AND SYSTEM FACILITY CHARGES

Sewer service charges and system facility charges are levied by the City and County of Honolulu to fund the major costs associated with capital improvements and operation and maintenance of the wastewater system. This chapter addresses the current and future charges.

### 5.1 SOURCES AND USES OF FUNDS

The City and County of Honolulu's Department of Environmental Services revenues are currently derived from three major sources: monthly sewer service charges, system facility charges, and interest earned on fund balances. Of these, sewer service charges are the major source of revenue. The summary of the two sources of funding from system users and uses of these funds is shown in Table 10.

<b>Table 10 User Revenues - Sources and Uses</b> <b>City and County of Honolulu</b> <b>Department of Environmental Services</b>		
<b>Source of Funds</b>	<b>Who Pays</b>	<b>Use of Funds</b>
Sewer Service Charges	Existing Users	<ul style="list-style-type: none"> <li>• O&amp;M Costs for Existing Facilities</li> <li>• Replacement of Existing Facilities</li> <li>• Construction to Improve Treatment</li> </ul>
System Facility Charges	New Users	<ul style="list-style-type: none"> <li>• Construction to Accommodate Growth</li> <li>• Construction to Improve Treatment</li> </ul>

In the past, property taxes have been used to cover annual debt service on general obligation bonds incurred for capital construction costs of wastewater facilities. However, the City and County made the decision in 1993 to recover all wastewater debt costs through user charges. Wastewater revenues currently fund all annual debt service on previously issued reimbursable General Obligation Bonds allocated to wastewater, and the City Council's policy is to not fund any new wastewater capital improvements directly through property taxes or with general obligation bonds.

State Revolving Fund (SRF) proceeds have been a reliable source of funding for wastewater projects, ranging from \$11 to over \$20 million per year, as shown in Table 11. The SRF proceeds are anticipated to continue at \$ 10.0 million annually through FYE 2017 as shown in Table 13 in Chapter 6.

<b>Table 11 Historical Wastewater Revenues and Expenditures<sup>(1)</sup></b> <b>City and County of Honolulu Department of Environmental Services</b>				
	<b>(Amount in \$ Millions)</b>			
<b>Fiscal Year</b>	<b>96/97</b>	<b>97/98</b>	<b>98/99</b>	<b>99/00</b>
<b><u>ESDUs Served</u></b>				
Residential ESDUs at Start of Year	196,717	198,130	199,286	200,759
Non-Residential ESDUs, Start of Year	77,359	77,561	77,679	77,704
Total ESDUs at Start of Year	274,076	275,691	276,965	278,463
Residential New ESDUs Added	1,413	1,156	1,472	1,575
Non-Residential New ESDUs Added	202	118	25	36
Total New ESDUs Added <sup>(2)</sup>	1,615	1,274	1,497	1,611
<b><u>Charges</u></b>				
Average Monthly Sewer Service Charge <sup>(3)</sup>	\$33.65	\$33.65	\$33.65	\$33.35
% Increase Over Prior Year	0.0%	0.0%	0.0%	-0.9%
System Facility Charge	\$1,146	\$1,146	\$1,146	\$1,146
% Increase Over Prior Year	0.0%	0.0%	0.0%	0.0%
<b><u>Estimated Cashflow and Coverage</u></b>				
Revenue				
Service Charges <sup>(4)</sup>	\$110.6	\$111.8	\$111.4	\$121.7
System Facility Charges	1.2	1.0	1.7	2.3
Other Revenues <sup>(5)</sup>	1.5	0.7	3.1	3.9
Total Revenues	\$113.3	\$113.5	\$116.1	\$127.8
O&M Expenses				
Direct Expenses	\$55.4	\$48.2	\$44.1	\$43.1
Indirect Expenses	32.7	23.7	21.5	24.6
Total O&M Expenses	\$88.1	\$71.9	\$65.7	\$67.7
Net Revenues	\$25.2	\$41.6	\$50.5	\$60.1
Total Debt Service (Revenue & G.O. Bonds and SRF Loans)	\$35.6	\$39.1	\$24.5	\$38.5
<b><u>Capital Project Financing</u></b>				
Capital Expenditures	\$34.2	\$37.0	\$45.8	\$54.8
Reimbursable G.O. Bond Proceeds	34.2	0.0	0.0	0.0
SRF Loan Proceeds	0.0	15.3	20.6	11.1
GAAP Fund Balances (beginning of fiscal year)				
Sewer Fund <sup>(6)</sup>	\$63.6	\$43.0	\$45.5	\$68.9
System Facility Charge Fund <sup>(7)</sup>	0.3	0.0	0.0	0.0
Total Beginning Balance	\$63.9	\$43.0	\$45.5	\$68.9
<b>Notes:</b>				
(1) Does not include Hawaii Kai, a privately owned and operated facility.				
(2) Does not reflect ESDUs changed or removed.				
(3) Decrease in Average monthly Sewer Service charge in FY 99/00 due to water conservation measures.				
(4) Increase in Sewer Service Charges for FY99/00 due to change to accrual accounting.				
(5) Includes cesspool pumping, connection, lateral installation charges, other, state, and interest.				
(6) Includes reserves for encumbrances.				
(7) System facility charge fund discontinued in 97/98.				

Sewer service charges and system facility charges fund the major portion of costs incurred by the Department. The major cost components funded by sewer service charges and system facility charges are as follows:

- Operation and maintenance of WWTP's and collection system facilities including pumping and cesspools.
- Planning, design and construction of capital projects for rehabilitation, improvement and expansion.
- Annual debt service for obligations incurred for construction of existing facilities.
- Maintenance of appropriate reserves.

System facility charge revenues are used to partially fund capital projects. The City and County of Honolulu currently maintains Sewer Fund (#170), which, as of July 1, 2000, had a balance of \$133,625,466. This fund is available for operations and wastewater capital costs.

Interest earned on reserves is available to pay debt service and is retained in the respective reserve or used as appropriate.

Monthly sewer service charges fund operation and maintenance costs and debt service on non-growth related CIP costs.

## **5.2 HISTORICAL REVENUES AND EXPENDITURES**

A four-year summary of historical revenues and expenditures is shown in Table 11. Sewer service charges have been held constant since July 1, 1993. New connections have averaged approximately 2,400 equivalent single-family dwelling units (ESDU) per year between 1991 and 2000, although the average over the past five years has decreased to approximately 1,700 ESDUs per year. System facility charges have been held constant since fiscal year 1991-1992.

## **5.3 EXISTING RATES AND CHARGES**

Summaries of current sewer service charges are presented in Table 12. As discussed, sewer service charges have been held constant since July 1, 1993. The current City and County of Honolulu sewer service charge established in the current sewer service ordinance for single-family residences averages approximately \$33.35 per month. New connections have averaged approximately 1,700 equivalent single-family dwelling units (ESDU) per year over the past five years. Wastewater system facility charges have been held constant at \$1,146 per (ESDU) since 1991-1992.



Table 12 Summary of Current Sewer Rate Ordinance City and County of Honolulu Department of Environmental Services	
Effective July 1, 1993 Standard	
<b><u>Residential Sewer Service Charges</u></b>	
Single family and duplex dwellings served by City Water system per dwelling unit per month:	
Monthly Base Charge	\$24.85
Monthly Usage Charge	-
First 2,000 Gallons of Metered Water Consumed	No Charge
Charge per 1,000 Gallons Over 2,000 Gallons <sup>(1)</sup>	\$1.05
Single family and duplex dwellings not served by City Water system per dwelling unit per month:	
Monthly Base Charge	\$33.65
Multiple-unit dwellings served by City Water system per dwelling unit per month:	
Monthly Base Charge	\$17.40
Monthly Usage Charge	-
First 2,000 Gallons of Metered Water Consumed	No Charge
Charge per 1,000 Gallons Over 2,000 Gallons <sup>(1)</sup>	\$1.05
Multiple-unit dwellings not served by City Water system per dwelling unit per month:	
Monthly Base Charge	\$23.55
<b><u>Nonresidential Sewer Service Charges</u></b>	
Domestic Strength Wastewater	
1. Metered Water Usage	
a. If usage is 9,000 gallons or less per month:	
Monthly Base Charge	\$22.35
Charge per 1,000 Gallons	\$0.13
b. If usage is greater than 9,000 gallons per month:	
Monthly Base Charge	\$22.35
Charge per 1,000 Gallons	\$2.49
2. Metered Wastewater Discharge	
a. If usage is 7,000 gallons or less per month:	
Monthly Base Charge	\$22.35
Charge per 1,000 Gallons	\$0.16
b. If usage is greater than 7,000 gallons per month:	
Monthly Base Charge	\$22.35
Charge per 1,000 Gallons	\$3.12
<b><u>Wastewater System Facility Charges</u></b>	<b>Effective 1991/92</b>
Wastewater System Facility Charge per ESDU <sup>(2)</sup>	\$1,146
Notes:	
(1) Water consumed reduced by the irrigation factor of 18%	
(2) ESDU = Equivalent Single Family Dwelling Unit	

## **5.4 COMPARISON WITH RATES CHARGED BY OTHER AGENCIES**

Several considerations are important when making sewer service charge and system facility charge comparisons for the City and County of Honolulu with other agencies. These considerations include the following:

- Economies of scale are difficult to achieve due to small service areas.
- Historically, system facility charges have been low.
- Equipment costs are high due to the remote location of the island from major suppliers.
- Electricity costs on the island are high.
- Remote facilities and rough terrain add to system complexity and cost.

The harsh salt water environment increases ongoing maintenance costs, reduces useful life of facilities and leads to excessive infiltration and inflow conditions due to the accelerated deterioration of collection systems.

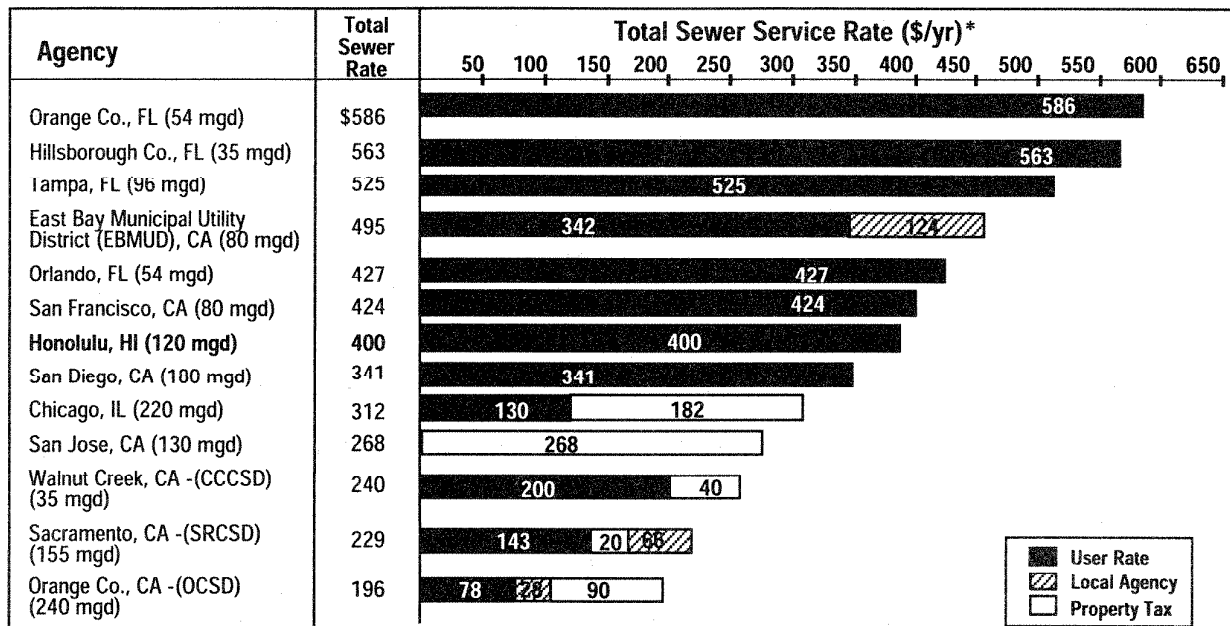
A comparison of the single family monthly sewer service charge and system facility charge of the City and County of Honolulu to those charges and fees of other similar agencies throughout the United States is presented in Figures 16 and 17. These comparisons are made on an equivalent cost basis and take into consideration local agency charges for collection systems as well as property tax revenues in addition to the monthly user rate. As shown in Figure 17, the current system facility charge for the City and County of Honolulu is among the lowest of the agencies surveyed.

## **5.5 PROJECTED RATES AND CHARGES**

Historical and projected sewer service and system facility charges are presented in Figure 18. It is anticipated that both sewer service and system facility charges will increase beginning in fiscal year 2003/2004.

Sewer service charges have been the subject of considerable public discussion since the last increase in 1993. Of particular concern has been the unlimited inclusion of water use in the volume component of the charge. The Department has undertaken an evaluation of the rate structure, including a consultant study and a series of public meetings, and has recommended a revenue neutral revision to the rate structure to address the irrigation water issue and increase fairness. Throughout this process, and in numerous other public outreach settings, the Department has identified the need for future rate increases to support necessary measures to provide appropriate service and ensure public health.

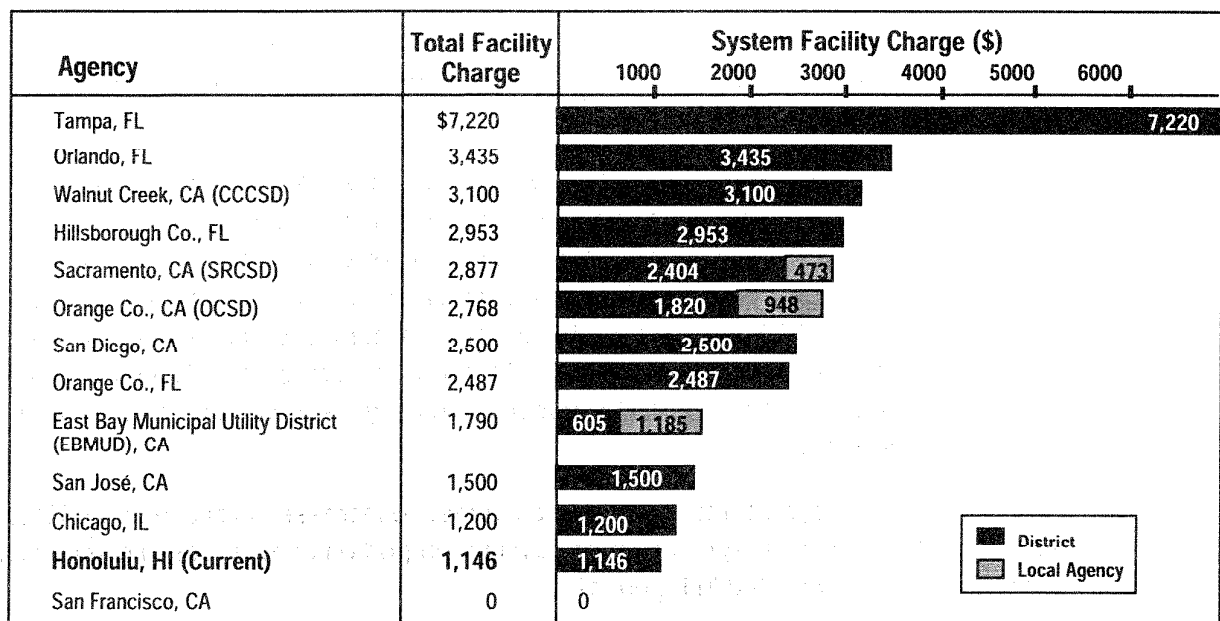
As shown in Figure 18, the system facility charge is planned to increase in fiscal year 2003/2004. Revenues from system facility charges represent a minor proportion of revenues in comparison to sewer service charges, as reflected in Figure 19.



\* Total of user rate (treatment / disposal), local agency and property taxes

**Figure 16**  
**COMPARISON OF RESIDENTIAL**  
**SEWER SERVICE CHARGES**  
**CITY AND COUNTY OF HONOLULU**

*All rates shown based on current (2001) ordinances.*



*All charges shown based on current (2001) ordinances.*

**Figure 17**  
**COMPARISON OF RESIDENTIAL**  
**SYSTEM FACILITY CHARGES**  
**CITY AND COUNTY OF HONOLULU**

## Average Single-Family Residential

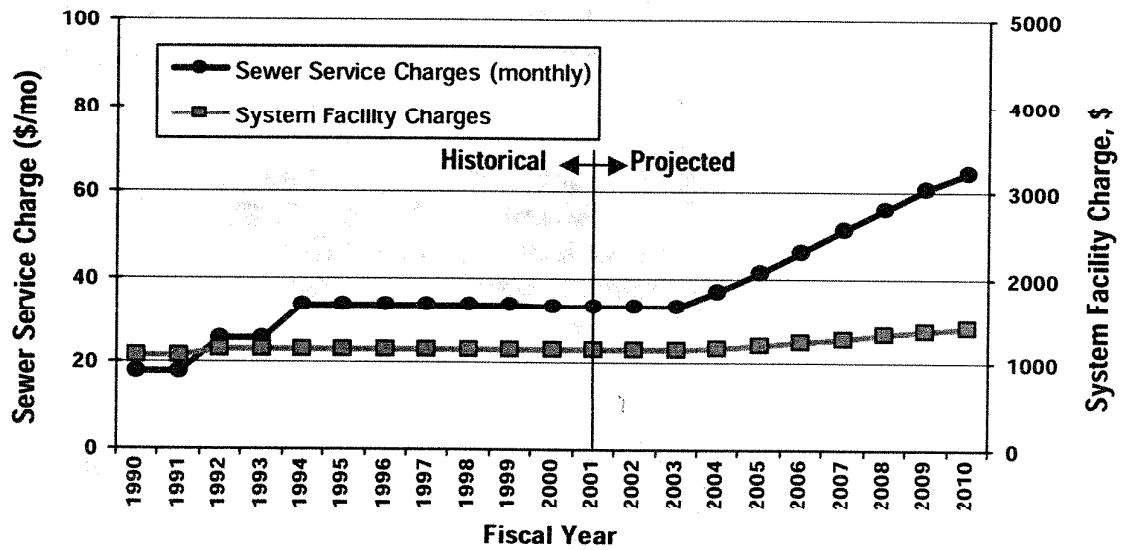


Figure 18  
HISTORICAL AND PROJECTED  
SEWER SERVICE AND  
SYSTEM FACILITY CHARGES  
CITY AND COUNTY OF HONOLULU

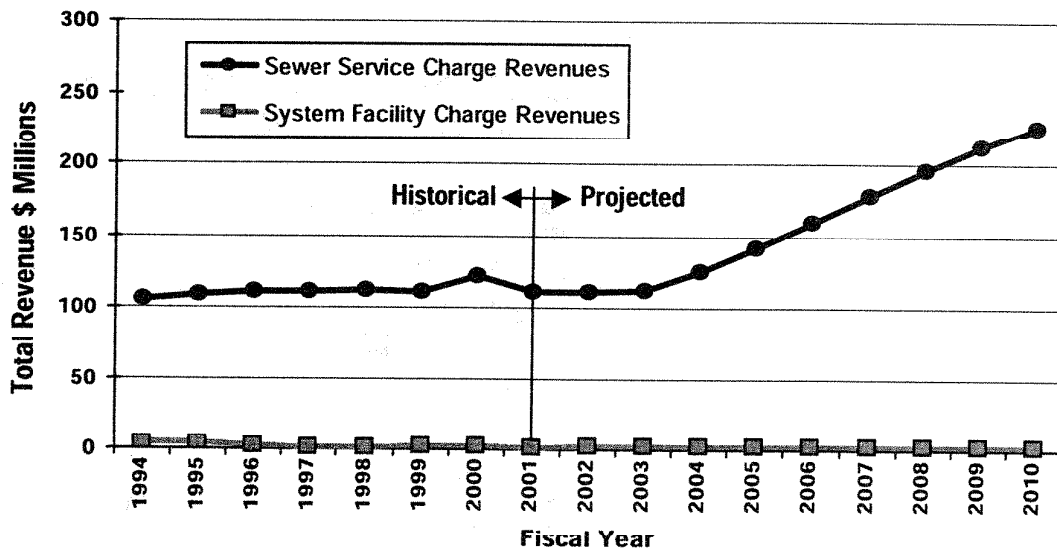


Figure 19  
TOTAL REVENUES FROM  
SEWER SERVICE AND  
SYSTEM FACILITY CHARGES  
CITY AND COUNTY OF HONOLULU

The City Council has not yet approved the adoption of sewer service and system facility charges beyond fiscal year 2000/2001. The City Council has adopted a set of Debt and Financial Policies for its wastewater system that require, among other things, the City to maintain a 1.60 times coverage for its Senior Revenue bonds. It is expected that the City will adopt annual increases in sewer service and system facility charges necessary to meet the debt service coverages prescribed in its Debt and Financial Policies. The City has adhered to the Debt and Financial policies in the previous years and met all stated goals.

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## SUMMARY OF PROJECTED REVENUES AND EXPENSES

A ten year projection through FYE 2010 for the City and County of Honolulu Department of Environmental Service's operations has been prepared and is presented in Table 13. As shown in Table 13, sewer service charges are projected to be the major source of revenues to cover debt service, as has been the case in the past (see Figure 20).

The principal assumptions underlying these projections follow:

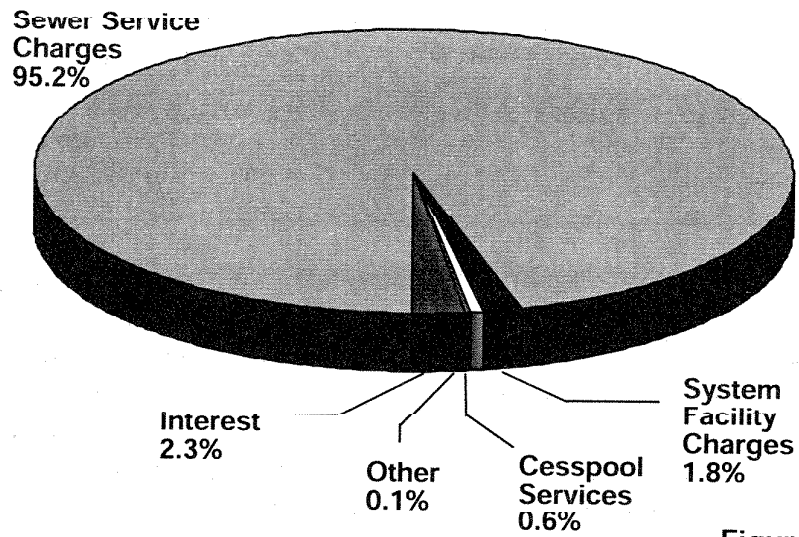
- Growth in ESDUs is 1,457 per year through FYE 2010. The majority of the growth in ESDUs is projected to be residential, as is the current customer base.
- Capital expenditures are assumed to be required and made as reflected in Table 13 to meet consent decree milestones and accommodate forecasted population growth as projected in the City and County of Honolulu 1992 General Plan.
- Interest earnings on fund balances are assumed at 5.0 percent.
- Debt service reserve fund requirements are cash funded from bond proceeds.
- Debt service on the Series 2001 Bonds is assumed at an all-in interest cost of 5.5 percent, and the bond payment period is assumed at 30 years. Debt service on all future revenue bonds issues is assumed at an all-in interest cost of 5.5 percent, and the bond repayment period for all future issues is assumed to be 30 years. All future revenue bond issues to fund the CIP are assumed to be issued on parity with the Series 2001 Bonds.
- Bond issuance costs are estimated at 1.0 percent of net bond proceeds.
- Unrestricted reserve balances are maintained at levels indicated in the projections.
- "Required Rate Increases" as identified in Table 14 are assumed to be made by the City Council on a timely basis to produce the incremental revenues projected herein.
- Inflation of capital expenditures and operations and maintenance (O&M) costs is assumed at 3.0 percent per annum for all categories including labor.
- No increases above inflation of operation and maintenance costs are expected. Any additional facilities will be served at existing or lower staffing levels as discussed in Chapter 2, while maintaining effective facility performance.
- Discharge characteristics from existing customers will not vary significantly from the values identified on the various wastewater facilities plans.
- No catastrophic events resulting from natural or human causes will occur that will have a substantial adverse impact on the integrity of the City and County of Honolulu's wastewater facilities or the activities of their customers.
- Payment of existing reimbursable general obligation bond debt to be accomplished through the issuance of commercial paper which will be taken out with long term Junior Lien Revenue Bonds.

**Table 13 10-Year Projected Cash Flow Summary**  
**City and County of Honolulu Department of Environmental Services**

(Revenue and Expense Numbers in Millions)											
Fiscal Year Ending June 30											
Fiscal Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	TOTAL
<b>Growth Assumptions</b>											
Total ESDUs at Start of Year	279,963	281,272	282,729	284,186	285,643	287,100	288,558	290,015	291,472	292,929	
Total New ESDUs Added	1,309	1,457	1,457	1,457	1,457	1,457	1,457	1,457	1,457	1,457	14,424
<b>Revenues</b>											
Sewer Service Charges <sup>(1)</sup>	\$111.3	\$111.2	\$112.6	\$125.6	\$141.4	\$159.2	\$177.6	\$195.4	\$212.1	\$226.0	\$1,572.4
System Facility Charges <sup>(1)</sup>	1.5	1.7	1.7	1.7	1.8	1.8	1.9	1.9	2.0	2.1	18.0
Interest on Sewer Reserve Fund and Unreserved Fund <sup>(1)</sup>	1.9	5.7	4.2	4.6	5.0	5.4	5.5	5.8	6.1	6.7	50.9
Other Revenues <sup>(2)</sup>	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.1	0.1	0.1	6.7
<b>TOTAL REVENUES</b>	<b>\$115.7</b>	<b>\$119.5</b>	<b>\$119.3</b>	<b>\$132.8</b>	<b>\$149.0</b>	<b>\$167.3</b>	<b>\$185.9</b>	<b>\$203.3</b>	<b>\$220.3</b>	<b>\$234.8</b>	<b>\$1,647.9</b>
<b>Operating Expenses</b>											
O&M Costs <sup>(3)</sup>	\$66.4	\$71.3	\$69.7	\$77.4	\$77.4	\$80.2	\$83.2	\$86.6	\$89.6	\$92.7	\$794.6
<b>TOTAL EXPENSES</b>	<b>\$66.4</b>	<b>\$71.3</b>	<b>\$69.7</b>	<b>\$77.4</b>	<b>\$77.4</b>	<b>\$80.2</b>	<b>\$83.2</b>	<b>\$86.6</b>	<b>\$89.6</b>	<b>\$92.7</b>	<b>\$794.6</b>
<b>TOTAL NET REVENUES</b>	<b>\$49.2</b>	<b>\$48.2</b>	<b>\$49.7</b>	<b>\$55.5</b>	<b>\$71.6</b>	<b>\$87.1</b>	<b>\$102.7</b>	<b>\$116.6</b>	<b>\$130.7</b>	<b>\$142.1</b>	<b>\$853.4</b>
<b>Debt Service</b>											
2001 Sr. Bonds and Future Sr. Revenue Bond Debt Service	\$0.0	\$3.8	\$9.3	\$16.5	\$27.9	\$47.4	\$57.6	\$67.4	\$76.2	\$83.4	\$389.6
Previous Sr. Revenue Bond Debt Service	2.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	34.6
Future Jr. Revenue Bond Debt Service	0.0	0.0	0.3	1.0	1.9	3.3	4.3	5.2	6.0	6.7	28.7
Previous Jr. Revenue Bond Debt Service	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	12.3	14.1	118.2
Reimbursable G.O. Debt Service	13.2	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.8
SRF Loans (Existing and Future)	7.6	7.9	8.6	9.3	10.0	10.7	11.4	12.0	12.7	13.4	103.6
<b>Total Debt Service</b>	<b>\$34.8</b>	<b>\$31.4</b>	<b>\$33.3</b>	<b>\$41.9</b>	<b>\$54.8</b>	<b>\$76.4</b>	<b>\$88.3</b>	<b>\$99.6</b>	<b>\$110.8</b>	<b>\$121.3</b>	<b>\$692.6</b>
<b>TOTAL NET REVENUES AVAILABLE FOR OTHER REQUIREMENTS</b>	<b>\$14.4</b>	<b>\$16.8</b>	<b>\$16.4</b>	<b>\$13.6</b>	<b>\$16.8</b>	<b>\$10.6</b>	<b>\$14.4</b>	<b>\$17.0</b>	<b>\$19.9</b>	<b>\$20.9</b>	<b>\$160.8</b>
Sr. Revenue Bond Coverage Ratio <sup>(4)</sup>	18.55	6.35	3.72	2.67	2.22	1.67	1.65	1.62	1.61	1.61	
Total Revenue Bond Coverage Ratio <sup>(4)</sup>	3.40	2.47	1.95	1.65	1.56	1.30	1.31	1.31	1.31	1.30	
Total Debt Coverage Ratio <sup>(4)</sup>	1.37	1.48	1.44	1.28	1.27	1.12	1.14	1.15	1.16	1.16	
<b>Capital Project Financing</b>											
Transfer to CIP from sewer fund	\$12.7	\$9.6	\$9.9	\$10.0	\$11.0	\$12.0	\$11.8	\$14.9	\$13.0	\$12.2	\$117.0
SRF Loan Proceeds	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	\$100.0
Net Revenue Bond Proceeds	0.0	185.0	180.0	200.0	140.0	130.0	130.0	100.0	90.0	95.0	\$1,250.0
Interest on CIP Project Fund	2.1	0.3	6.5	9.6	9.6	5.3	4.4	4.7	4.0	2.9	\$49.4
<b>Net CIP Financing</b>	<b>\$24.8</b>	<b>\$204.9</b>	<b>\$206.4</b>	<b>\$229.6</b>	<b>\$170.6</b>	<b>\$157.3</b>	<b>\$156.2</b>	<b>\$129.6</b>	<b>\$117.0</b>	<b>\$120.1</b>	<b>\$1,516.4</b>
<b>Capital Expenditures</b>											
Capital Expenditures	\$60.3	\$81.4	\$144.1	\$228.2	\$257.9	\$175.0	\$149.1	\$143.4	\$139.6	\$129.1	\$1,508.3
Purchase of existing assets <sup>(5)</sup>		\$41.0									
Major Reserves & Funds (end of year)											
Unrestricted Reserve Balance	\$97.1	\$66.1	\$75.3	\$79.8	\$88.6	\$90.0	\$95.5	\$100.5	\$110.6	\$122.9	
Sewer Fund Reserve <sup>(6)</sup>	\$16.6	\$17.0	\$17.4	\$19.3	\$19.4	\$20.1	\$20.8	\$21.7	\$22.4	\$23.2	
CIP Project Fund	\$5.6	\$129.1	\$191.5	\$192.8	\$105.5	\$87.8	\$94.8	\$81.0	\$58.4	\$49.4	
<b>Projected Charges Required</b>											
Monthly Sewer Service Charge <sup>(7)(8)</sup>	\$33.27	\$33.18	\$33.18	\$36.83	\$41.25	\$46.20	\$51.29	\$56.16	\$60.65	\$64.29	
Increase Over Prior Year	-0.24%	-0.26%	0.0%	11.0%	12.0%	12.0%	11.0%	9.5%	8.0%	6.0%	
System Facility Charge	\$1,146	\$1,146	\$1,146	\$1,180	\$1,215	\$1,251	\$1,289	\$1,328	\$1,368	\$1,409	
Increase Over Prior Year	0%	0%	0%	3%	3%	3%	3%	3%	3%	3%	

Notes:  
(1) Revenues from Sewer Service Charges, Facility Charges and Interest are as budgeted for 2001 - 2002. For 2003 and beyond revenues are calculated values.  
(2) Includes cesspool pumping, connection services, lateral installation, misc. state funding, and other revenues.  
(3) Includes all operating expenses: salaries, non-salary personnel costs, administrative support, equipment, general fund rental and other expenses.  
(4) Revenues for coverage calculations do not include system facility charges.  
(5) Purchase treated as a capital expenditure - paid for out of the unrestricted reserve.  
(6) Sewer fund reserve based upon maintaining 3 months of operating expenses. Excess/(shortfall) applied to unrestricted reserve.  
(7) Sewer service charges based on budgeted revenues in 2001 and 2002. For 2003 and beyond charges are calculated based upon projected rate increases.  
(8) Decrease in rates for 2001 and 2002 due to anticipated water conservation effects.

**Total = \$128 Million**



**Figure 20**  
**REVENUE SOURCES**  
**FISCAL YEAR 1999-2000**  
**CITY AND COUNTY OF HONOLULU**



The City Council has adopted a set of Debt and Financial Policies for its wastewater system that target, among other things, the City to maintain a 1.60 times coverage for its Senior Revenue Bonds and 1.25 times coverage for all Revenue Bonds (Senior and Junior). It is expected that the City will adopt annually increases in sewer services charges necessary to meet the debt service coverages prescribed in its Debt and Financial Policies. Current projections show that the debt service coverages will be achieved by: 1) increasing sewer service charges between 6.0 and 12.0 percent annual beginning in FYE 2004, and 2) increasing system facility charges 3.0 percent annually beginning in FYE 2004.

In addition, a sensitivity analysis was performed to determine the impact of low and high growth projections on the required monthly service charges and coverage ratios. The conservative growth rate assumption of 1,457 ESDUs per year (through FYE 2007) is less than historical recorded connection rates, particularly when compared to the most recent ten-year average of 2,400 ESDUs per year. Should growth increase, several projects may have to be accelerated in the implementation schedule. Because the CIP program will accommodate an additional 20 percent of flow above current levels, while projected ESDU growth assumed for purposes of estimating annual revenues is only 40,000 ESDUs, or 15 percent of the existing number of ESDUs, any additional growth, up to 55,000 ESDUs over the 20-year period, will be accommodated by the planned projects and would only add to estimated revenues. Based on this analysis, the City and County of Honolulu will comply with maintaining its Debt and Financial Policies.

**CONCLUSIONS**

Based upon our studies, the assumptions discussed in this report, and our review of the data and analysis provided by the City and County of Honolulu and its consultants, we conclude the following:

**7.1 COMPLIANCE WITH DISCHARGE REQUIREMENTS**

The City and County of Honolulu's Wastewater System collection and pumping facilities do not meet all of the current and anticipated federal and state regulatory requirements, and will require additional capacity necessary to serve the projected growth in the service area. These collection and pumping facilities constitute much of the need for capital facility improvements.

Completion of the CIP projects described in this report will permit the City and County of Honolulu to attain and to remain in compliance with all federal, state, and local regulations regarding treatment and discharge as described in the current NPDES permit and consent decrees.

**7.2 20-YEAR CIP**

An estimated \$1.71 billion of non-discretionary CIP project expenditures for various treatment, collection and other facilities are required to be constructed during the 20-year CIP program. This is to eliminate the current and projected critical deficiencies, to meet consent decree milestones, and to provide a wastewater system in a satisfactory operating condition based on projected wastewater usage and environmental and other regulatory requirements. The remaining approximately \$0.39 billion of CIP projects are discretionary, and have been identified primarily to improve wastewater treatment and collection systems efficiency. These CIP project expenditures are to be funded from proceeds of bonds, including the Series 2001 Bonds, and from net revenues and other charges.

The \$2.1 billion of CIP expenditure is technically sound and conforms with good engineering practice and the estimated total costs of the CIP have been realistically assessed.

**7.3 2001-2005 CIP PROJECTS**

The projects to be financed by the Series 2001 Bonds are the highest priority projects required to meet consent decree requirements and protect public health. They are included in recently completed facility plans, which identify the need for projects through the year 2017, and provide the most cost effective facilities evaluated in those plans.

The estimated project costs and construction schedules that have been developed for the 2001-2005 projects are reasonable and achievable.

## **7.4 DEPARTMENT MANAGEMENT**

The operations of the wastewater system are directed by a professional staff for the disciplines of operations specialists, maintenance (including electrical, instrumentation and mechanical), laboratory personnel and other technical support personnel.

## **7.5 FINANCIAL PROJECTIONS**

The financial projections with respect to the wastewater system are based on reasonable and conservative assumptions and fairly reflect the financial performance of the wastewater system.

Current customer rates and charges for the City and County of Honolulu compare favorably to other similar wastewater agencies. Projected customer rates and charges are based on periodic larger increases followed by extended periods of stable rates. This rate setting philosophy results in projected rates and charges which are reasonable when compared on an equivalent annual basis.

In the opinion of Carollo Engineers, projected sewer service and system facility charges will provide revenue sufficient to:

- Meet all projected costs of operation, maintenance and routine replacement of sewer system facilities.
- Meet the existing debt service obligations and the projected requirements for the Series 2001 Bonds, and future bond issues.
- Provide sufficient revenue to pay the costs of the City and County of Honolulu's CIP through the end of the forecast period.
- Meet reserve requirements of the bond resolution.

The funds obtained from the sale of the Series 2001 Bonds, current cash reserves, fees collected over the next few years, and future bond issues will be adequate to fund the current projects.

The rate at which growth occurs will not affect the ability of the City and County of Honolulu to meet its debt obligations because the growth is a small component of the overall costs and revenues associated with the financial projections. In general, many of the CIP projects are necessary and must proceed based on consent decree requirements and public safety and health concerns with or without any additional connections.

This report has been prepared at the request of the City and County of Honolulu for appending to the Official Statements relating to the issuance of the Series 2001 Bonds. The conclusions, observations, and recommendations contained herein constitute only the opinions of Carollo Engineers. The various background documents, statements and other information supplied by the City and County of Honolulu, its employees, and other consultants have been relied upon as being accurate in the performance of these analyses. However, no assurances are given nor warranties implied by Carollo as to the accuracy of such information. Carollo makes no certification and gives no assurances except as explicitly set forth in this report.

**GLOSSARY**

ADAF	average day annual flow
ADWF	average day dry weather flow
BOD <sub>5</sub>	five-day biochemical oxygen demand
CIP	Capital Improvement Plan
DOH	Department of Health
DWR	Department of Water Resources
ENRCCI	ENR Construction Cost Index
EPA	Environmental Protection Agency
ESDU	equivalent single-family dwelling unit
ft	feet
FY	fiscal year
FYE	fiscal year ending
gal	gallons
GO Bonds	General Obligation Bonds
gpd	gallons per day
gpm	gallons per minute
mgd	million gallons per day
mg/l	milligrams per liter
NPDES	National Pollutant Discharge Elimination System
O&M	operations and maintenance
PHWWF	peak hour wet weather flow
PWWF	peak wet weather flow
SEP	supplemental environmental projects
SFR	single-family residence
TSS	total suspended solids
WWTP	wastewater treatment plant
WWPTF	wastewater pre-treatment facility

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## Appendix C

### Summary of Certain Provisions of the First Resolution

The First Resolution contains terms and conditions relating to the issuance of Bonds, including various covenants and security provisions, certain of which are summarized below. This summary does not purport to be comprehensive or definitive and is subject to all of the provisions of the First Resolution, to which reference is hereby made. Copies of the First Resolution are available from the City and County.

#### Certain Definitions

Certain definitions contained in the First Resolution are summarized below. This summary does not purport to be comprehensive or definitive, and is subject to all provisions of the First Resolution, to which reference is hereby made. Copies of the First Resolution are available from the Department of Budget and Fiscal Services or the Department of Environmental Services of the City and County.

*"Accrued Debt Service"* means as of any date of computation and with respect to the Bonds of any Series, an amount equal to the sum of: (i) interest on such Bonds accrued and unpaid and to accrue to the end of the then current calendar month, and (ii) principal, Sinking Fund Installment and redemption premium which are due and unpaid for such Bonds and that portion of the principal, unsatisfied balance of any Sinking Fund Installment (as determined in accordance with the First Resolution) and redemption premium for such Bonds next due which would have accrued to the end of such calendar month if deemed to accrue monthly from a date one year prior to its due date.

*"Act"* means Chapter 49, Hawaii Revised Statutes, and all laws amendatory or supplemental thereto.

*"Aggregate Debt Service"* means, for any period and as of any date of computation, the sum of the amounts of Debt Service for such period with respect to all Series of Bonds.

*"Assumed Long-Term Fixed Rate"* means, with respect to Variable Rate Bonds, (i) a numerical rate of interest that such Bonds would have borne if issued as Fixed Rate Bonds with the same maturity and taking into account Sinking Fund Installments; or (ii) if the City and County has in connection with such Variable Rate Bonds entered into an Interest Rate Exchange Agreement which provides that the City and County is to pay to another person an amount determined based upon a fixed rate of interest on a notional amount and which requires the Counterparty to pay to the City and County an amount equal to the amount by which interest on the notional amount stated therein at the rate borne by such Variable Rate Bonds exceeds the interest payable on such notional amount at a rate stated therein, the fixed rate or other rate of interest set forth in or determined in accordance with such agreement. With respect to the Bonds described in clause (i) of the preceding sentence, an Authorized Officer is to certify or cause the Remarketing Agent for such Series of Variable Rate Bonds or other qualified person to certify such Assumed Long-Term Fixed Rate on the issue date of such Bonds, taking into account such market factors as such Authorized Officer or such Remarketing Agent or such qualified person deems necessary or appropriate.

*"Authorized Officer"* means the Director of Budget and Fiscal Services, any Deputy Director of Budget and Fiscal Services, the Director of Environmental Services or any other officer of the City and County designated by resolution of the City Council.

*"Bond Anticipation Notes"* means bond anticipation notes which the City and County may issue for purposes of the Wastewater System if the requirements set forth in the First Resolution for such issuance are satisfied.

*"Bond Counsel"* means an attorney or a firm of attorneys of nationally recognized standing in the field of law relating to municipal bonds selected by the City and County.

*"Bondholder"* or *"holder of a Bond"* or *"Holder"* means the registered owner of any Bond which at the time is registered other than to bearer, or such holders' duly authorized attorney in fact, representative or assigns.

*"Capital Appreciation Bond"* means any Bond as to which interest is compounded on each Valuation Date therefor and is payable only at the maturity or prior redemption thereof.

*"City Charter"* means the 1973 Revised Charter of the City and County of Honolulu (1994 Edition), as the same may be amended from time to time.

*"City Code"* means the Revised Ordinances of Honolulu 1990, as the same may be amended from time to time.

*"City Council"* mean the City Council of the City and County.

*"Code"* means the Internal Revenue Code of 1986, as amended, and any successor statutes thereto, and any applicable regulations thereunder.

*"Common Reserve Account Requirement"* means as of any date of computation, an amount equal to the greatest amount of Aggregate Debt Service for the then current or any future Fiscal Year on all Outstanding Bonds entitled to the benefit of the Common Reserve Account; provided however, that if upon issuance of a Series of Bonds entitled to the benefit of the Common Reserve Account, such amount would require moneys to be credited to the Common Reserve Account from such Bond proceeds in an amount in excess of the maximum amount permitted under the Code, the Common Reserve Account Requirement will mean an amount equal to the sum of the Common Reserve Account Requirement immediately preceding issuance of such Bonds and the maximum amount permitted under the Code to be deposited therein from the proceeds of such Bonds, as certified by an Authorized Officer; provided further, however, that for purposes of this definition, Aggregate Debt Service is to be computed with respect to each Variable Rate Bond entitled to the benefit of the Common Reserve Account by using the Assumed Long-Term Fixed Rate applicable thereto.

*"Consulting Engineer"* means the engineer or engineering firm or corporation retained from time to time pursuant to the First Resolution to perform the acts and carry out the duties provided for such Consulting Engineer in the First Resolution.

*"Costs"* means all costs of any Improvement and include, but are not be limited to, all costs and estimated costs of the issuance of the Bonds, all architectural, engineering, inspection, financial and legal expenses, the cost of causing the payment of the principal or interest or both of the Bonds to be insured or guaranteed, the initial cost of any Support Facility or Interest Rate Exchange Agreement obtained or permitted by the Act, and interest which it is estimated will accrue during the construction of any Improvements and for six (6) months thereafter.

*"Debt Service"* means, as of any particular date of computation, with respect to any Bonds and with respect to any period, the aggregate of the amounts to be paid or set aside in such period for the payment (or retirement) of the principal and Redemption Price (if any) of, and interest on, such Bonds; provided, however, that the term "Debt Service" does not include interest on Bonds to the extent it is to be paid from amounts on credit to a Series Improvement Interest Subaccount, amounts on credit to the Debt Service Account or any other provisions made for the payment of interest.

*"Department"* means the Department of Environmental Services of the City and County as established by the City Charter, or the successor thereto.

*"Depository"* means any bank, national banking association or trust company selected and appointed by an Authorized Officer in accordance with the First Resolution as a depository of moneys and Investment Securities held under the provisions of the First Resolution.

*"Depository"* means The Depository Trust Company, New York, New York, or its nominee, or any other person, firm, association or corporation designated in the Series Resolution authorizing a Series of Bonds or a Series Certificate relating to such Series of Bonds to serve as securities depository for the Bonds of such Series.



*"Director of Budget and Fiscal Services"* means the Director of Budget and Fiscal Services of the City and County appointed pursuant to and having the powers as set forth in the Act and the City Charter, or any successor.

*"Director of Environmental Services"* means the Director of the Department of Environmental Services of the City and County appointed pursuant to and having the powers as set forth in the Act and the City Charter, or any successor.

*"Exempt Obligation"* means an obligation of any state or territory of the United States of America, any political subdivision of any state or territory of the United States of America, or any agency, authority, public benefit corporation or instrumentality of such state, territory or political subdivision, the interest on which is excludable from gross income under Section 103 of the Code, and which; at the time an investment therein is made or such obligation is deposited in any fund or account under the First Resolution, is rated, without regard to qualification of such rating by symbols such as "+" or "-" or numerical notation, "Aa" or better by Moody's and "AA" or better by S&P, or, if such obligation is not rated by Moody's or S&P, or, if such obligation is rated by neither Moody's nor S&P, has been assigned a comparable rating by another nationally recognized rating service, but in no event rated lower than the lowest rating on Outstanding Bonds assigned by Moody's or S&P.

*"Fiscal Year"* means the twelve month period established by the City and County or provided by law from time to time as its fiscal year, and which, as of the date of adoption of the First Resolution, is the 12-month period commencing on July 1 of any year and ending on June 30 of the following year.

*"Government Obligation"* means a direct obligation of the United States of America, an obligation the principal of, and interest on, which are guaranteed by the United States of America, provided, that the full faith and credit of the United States of America is pledged to any such direct obligation or guarantee.

*"Improvements"* means the acquisition, purchase, construction, reconstruction, improvement, betterment or extension of the Wastewater System.

*"Interest Rate Exchange Agreement"* means an agreement entered into by the City and County relating to Bonds of one or more Series which provides that during the term of such agreement the City and County is to pay to the Counterparty an amount based on the interest accruing at a fixed or variable rate per annum on a notional amount and that the Counterparty is to pay to the City and County either (i) an amount based on the interest accruing on such notional amount at a fixed, capped or variable rate per annum, in each case computed according to a formula set forth in such agreement, or that one will pay to the other any net amount due under such agreement, or (ii) an amount based on the amount by which the rate per annum at which such Bonds bear interest exceeds a rate per annum stated in such agreement.

*"Investment Agreement"* means an agreement for the investment of moneys with a Qualified Financial Institution.

*"Investment Securities"* means any of the following, if and to the extent that the same are legal for the investment of funds of the Department:

- (i) Government Obligations;
- (ii) Investment Agreements;
- (iii) Direct obligations and fully guaranteed certificates of beneficial interest of the Export-Import Bank of the United States; consolidated debt obligations and letter of credit-backed issues of the Federal Home Loan Banks; participation certificates and senior debt obligations of the Federal Home Loan Mortgage Corporation ("FHLMCs"); debentures of the Federal Housing Administration; mortgage-backed securities (except stripped mortgage securities which are valued greater than par on the portion of unpaid principal) and senior debt obligations of Fannie Mae ("FNMA's"); participation certificates of the General Services Administration; guaranteed mortgage-backed securities and guaranteed participation certificates of the Government National

Mortgage Association ("GNMA's"); guaranteed participation certificates and guaranteed pool certificates of the Small Business Administration; debt obligations and letter of credit-backed issues of the Student Loan Marketing Association; local authority bonds of the U.S. Department of Housing & Urban Development; guaranteed Title XI financings of the U.S. Maritime Administration; guaranteed transit bonds of the Washington Metropolitan Area Transit Authority; Resolution Funding Corporation securities.

(iv) direct obligations of any state or territory of the United States of America or any subdivision or agency thereof whose unsecured, uninsured and unguaranteed general obligation debt is rated, at the time of purchase, "Aa" or better by Moody's and "AA" or better by S&P, or any obligation fully and unconditionally guaranteed by any state, subdivision or agency whose unsecured, uninsured and unguaranteed general obligation debt is rated, at the time of purchase, "Aa" or better by Moody's and "AA" or better by S&P;

(v) commercial paper (having original maturities of not more than 270 days) rated, at the time of purchase, "P-1" by Moody's and "A-1" or better by S&P;

(vi) Federal funds, unsecured certificates of deposit, time deposits or bankers acceptances (in each case having maturities of not more than 365 days) of any domestic bank including a branch office of a foreign bank which branch office is located in the United States, provided legal opinions are received to the effect that full and timely payment of such deposit or similar obligation is enforceable against the principal office or any branch of such bank, which, at the time of purchase, has a short-term "Bank Deposit" rating of "P-1" by Moody's and a "Short-Term CD" rating of "A-1" or better by S&P.

(vii) deposits of any bank or savings and loan association which has combined capital, surplus and undivided profits of not less than \$3 million, provided such deposits are continuously and fully insured by the Bank Insurance Fund or the Savings Association Insurance Fund of the Federal Deposit Insurance Corporation ("FDIC");

(viii) investments in money-market funds rated "Aaa" by Moody's, and "AAAm" or "AAAm-G" by S&P;

(ix) repurchase agreements collateralized by Government Obligations, GNMA's, FNMA's or FHLMC's with any registered broker/dealer subject to the Securities Investors' Protection Corporation jurisdiction or any commercial bank insured by the FDIC, if such broker/dealer or bank has an uninsured, unsecured and unguaranteed obligation rated in the top two rating tiers by Moody's, and "AA-1" or "AA-" or better by S&P, provided:

(a) a master repurchase agreement or specific written repurchase agreement governs the transaction; and

(b) the securities are held free and clear of any lien by the Depository or an independent third party acting solely as agent ("Agent") for the Depository, and such third party is (i) a Federal Reserve Bank, or (ii) a bank which is a member of the Federal Deposit Insurance Corporation and which has combined capital, surplus and undivided profits of not less than \$50 million, and the Depository has received written confirmation from such third party that it holds such securities, free and clear of any lien, as agent for the Depository; and

(c) a perfected first security interest under the Uniform Commercial Code, or book entry procedures prescribed at 31 C.F.R. 306.1 et seq. or 31 C.F.R. 350.0 et seq. in such securities is created for the benefit of the Depository; and

- (d) the repurchase agreement has a term of 3 years or less, and the Depositary or the Agent will value the collateral securities no less frequently than weekly and will liquidate the collateral securities if any deficiency in the required collateral percentage is not restored within two business days of such valuation; and
- (e) the fair market value of the securities in relation to the amount of the repurchase obligation, including principal and interest, is equal to at least 100%;
- (x) investments in any mutual fund whose portfolio is limited to Government Obligations and the investments described in clause (ii) of Investment Securities; and
- (xi) student loan resource securities including student loan auction rate securities, student loan asset-backed notes, student loan program revenue notes and bonds, and securities issued pursuant to Rule 144A of the Securities Act of 1933, including any private placement issues, issued with either bond insurance or overcollateralization guaranteed by the United States Department of Education, provided all insurers maintain an "Aaa" by Moody's, "AAA" by S&P or equivalent rating by other rating agencies.

"*Moody's*" means Moody's Investors Service, Inc., its successors and their assigns, and, if such corporation for any reason no longer performs the functions of a securities rating agency, "Moody's" is deemed to refer to any other nationally recognized rating agency, if any, designated by the Director of Budget and Fiscal Services.

"*Net Revenue Requirement*" means with respect to any Fiscal Year or any period, an amount equal to the greater of (i) the sum of (a) the Aggregate Debt Service in such Fiscal Year or such period, and (b) the Required Deposits for such Fiscal Year or such period; or (ii) 1.20 times the Aggregate Debt Service in such Fiscal Year or such period, plus 1.00 times the aggregate Support Facility Reimbursement Obligations outstanding as of the end of such Fiscal Year or such period.

"*Net Revenues*" means, with respect to any period; the Revenues during such period less amounts required to pay Operation and Maintenance Expenses.

"*Operation and Maintenance Expenses*" means the costs and expenses of operating and maintaining the Wastewater System, including, without limiting the generality of the foregoing, (i) all expenses includable in the operation and maintenance expense accounts of the Department relating to the Wastewater System according to generally accepted accounting principles, exclusive of depreciation and amortization of property values or losses, (ii) to the extent not included in the preceding clause (i) or paid from Bond proceeds or otherwise, the Department's share of the costs and expenses of operating and maintaining any plants and properties jointly owned with others, and (iii) the amounts, if any, payable to the United States Treasury Department pursuant to Section 148 of the Code.

"*Opinion of Counsel*" means with respect to the City and County a written opinion of counsel selected by the Director of Budget and Fiscal Services who is not an employee of the City and County, and which, with respect to Federal income tax law and securities law relating to obligations issued by state and local governmental units, is Bond Counsel. Any Opinion of Counsel may be based (insofar as it relates to factual matters or information which is in the possession of the City and County) upon a written certificate of the City and County unless such counsel knows, or in the exercise of reasonable care should have known, that such written certificate is erroneous.

"*Outstanding*" or "*outstanding*" when used with reference to Bonds means, as of any date, Bonds theretofore or thereupon issued pursuant to the First Resolution, except: (a) any Bonds canceled by a Paying Agent or paid at or prior to such date; (b) Bonds in lieu of or in substitution for which other Bonds have been delivered pursuant to the First Resolution; (c) Bonds deemed to be no longer outstanding under the First Resolution as provided in the First Resolution and (d) Option Bonds tendered or deemed tendered in accordance with the provisions of the Series Resolution or the Series Certificate relating to such Bonds.

*"Parity Support Facility Reimbursement Obligation"* means the obligation of the City and County described in the First Resolution to directly reimburse the Support Facility Provider of any Support Facility for amounts paid by such Support Facility Provider under such Support Facility or a Counterparty under an Interest Rate Exchange Agreement for amounts paid thereunder, on a parity with the obligation of the City and County to pay the Bonds, whether or not such obligation to reimburse is evidenced by a promissory note or other similar instrument.

*"Paying Agent"* means, as to Bonds of any particular Series, the Director of Budget and Fiscal Services or the bank or trust company designated for the payment of the principal and Redemption Price, if any of, and interest on, the Bonds of such Series in the Series Resolution authorizing the issuance of such Series or the Series Certificate relating to such Series.

*"Record Date"* means, with respect to any Series of Bonds, (i) with respect to the payment of interest, the fifteenth (15th) day (whether or not a Business Day) of the month preceding an interest payment date; (ii) with respect to notice of redemption, the 45th day (whether or not a Business Day) preceding the date of redemption; or (iii) such other day as may be provided in the Series Resolution authorizing the issuance of such Series or the Series Certificate relating to such Series.

*"Refunded Municipal Obligations"* means Exempt Obligations which are rated in the highest rating category by Moody's and S&P and provision for the payment of the principal of and interest on which has been made by an irrevocable deposit with a trustee or escrow agent of Governmental Obligations, which are held by a bank or trust company organized and existing under the laws of the United States of America or any state, the District of Columbia or possession thereof in the capacity as custodian, the maturing principal of and interest on which Government Obligations will be sufficient to pay, when due, the principal of and interest on such Exempt Obligations.

*"Reimbursable Obligations"* means reimbursable general obligation bonds issued and delivered or to be hereafter issued and delivered by the City and County to finance certain costs related to the Wastewater System, the debt service on which the Department is required by State law to reimburse the City and County's General Fund.

*"Reimbursable Obligation Requirement"* means, with respect to any period of time, the amount required to be credited to the Reimbursable Obligation Account pursuant to the ordinances and resolutions of the City Council authorizing the issuance and delivery of Reimbursable Obligations.

*"Required Deposits"* means, for any period, amounts required: (i) to be paid into the Common Reserve Account, each Separate Reserve Account, the Subordinate Obligation Account and Reimbursable Obligation Account; and (ii) to pay Support Facility Reimbursement Obligations.

*"Revenue Bond Index"* means the 30 year Revenue Bond Index of The Bond Buyer, a publication in New York, New York, or any successor publication maintaining such Index or in the event The Bond Buyer or any successor publication does not maintain such Index, an equivalent index with the same or similar components as the Revenue Bond Index.

*"Revenues"* means the moneys, including any moneys collected from the City and County or any department thereof other than the Department, derived by the Department from the rates, rentals, fees and charges prescribed for the use and services of, and the facilities and commodities furnished by, the Wastewater System, including, without limiting the generality of the foregoing, (i) all income, receipts, profits, and other moneys derived from the furnishing or supplying of the services, facilities and commodities through the Wastewater System; (ii) all income from investments of moneys held under the First Resolution including investment income on the Improvement Account but not including any earnings on the Rebate Account, the Subordinate Obligation Account or the Reimbursable Obligation Account; (iii) all payments made by Counterparties pursuant to Interest Rate Exchange Agreements; and (iv) moneys and Investment Securities transferred from the Rate Stabilization Account to the Sewer Fund within 90 days following the end of a Fiscal Year. "Revenues" will not include, (i) deposits subject to refund until such deposits have become the property of the City and County; (ii) contributions in-aid-of construction and assessment, impact and other similar fees imposed and collected by the City and County which are targeted to pay the Costs of specific Improvements; (iii) income, fees, charges, receipts, profits or other moneys derived by the Department from the ownership or operation of any separate utility system; (iv) any gifts, grants,

donations or other moneys received by the City and County for purposes of the Wastewater System from any State or Federal agency or other person if such gifts, grants, donations or other moneys are the subject of any limitation or reservation: (a) imposed by the donor or grantor; or (b) imposed by law or administrative regulation to which the donor or grantor is subject, limiting the application of such funds: (v) amounts retained in the Sewer Fund for working capital and operating reserves pursuant to the First Resolution; (vi) moneys and Investment Securities transferred from the Sewer Fund to the Rate Stabilization Account within 90 days following the end of a Fiscal Year; or (vii) Wastewater System Facility Charges:

"S&P" means Standard & Poor's Rating Services, a division of The McGraw-Hill Companies, its successors and their assigns, and, if such corporation for any reason no longer performs the functions of a securities rating agency, S&P is deemed to refer to any other nationally recognized rating agency designated by the Director of Budget and Fiscal Services.

"Serial Bonds" means Bonds which mature serially and which are not Term Bonds.

"Series," "Series of Bonds" or "Bonds of a Series" means all Bonds designated as being of the same series issued and delivered on original issuance in a simultaneous transaction, and any Bonds thereafter delivered in lieu thereof or in substitution therefor pursuant to the First Resolution.

"Sinking Fund Installment" means an amount so designated which is established pursuant to the First Resolution. The portion of any such Sinking Fund Installment remaining after the deduction of any such amounts credited pursuant to the First Resolution toward the same (or the original amount of any such Sinking Fund Installment if no such amounts have been credited toward the same) will constitute the unsatisfied balance of such Sinking Fund Installment for the purpose of calculation of Sinking Fund Installments due on a future date.

"Subordinate Obligations" means any bonds, notes or other evidences of indebtedness of the City and County payable from the Net Revenues, other than the Bonds and the Reimbursable Obligations, issued in compliance with the provisions of the First Resolution.

"Subordinate Obligation Requirement" means with respect to any period of time, the amount required to be deposited in the Subordinate Obligation Account pursuant to the First Resolution, indenture or other instruments of the City and County adopted by or entered into by the City and County in accordance with the First Resolution and providing for all payments with respect to Subordinate Obligations.

"Supplemental Resolution" means any resolution adopted by the City Council and becoming effective pursuant to and in compliance with the provisions of the First Resolution which amends or supplements the provisions of the First Resolution, any Series Resolution or any other Supplemental Resolution.

"Support Facility" means an irrevocable letter of credit, surety bond, loan agreement, standby purchase agreement or other agreement, facility or insurance or guaranty arrangement issued or extended by one or more Support Facility Providers, pursuant to which the City and County is entitled to obtain moneys to pay the principal or Redemption Price of Bonds due in accordance with their terms or tendered for purchase or redemption, plus accrued interest thereon to the date of payment, purchase or redemption thereof in accordance with the First Resolution and with the Series Resolution authorizing such Bonds or a Series Certificate relating to such Bonds, whether or not the City and County is in default.

"Support Facility Provider" means a bank, a trust company, a national banking association, an organization subject to registration with the Board of Governors of the Federal Reserve System under the Bank Holding Company Act of 1956 or any successor provisions of law, a federal branch pursuant to the International Banking Act of 1978 or any successor provisions of law, a savings bank, a savings and loan association, an insurance company or association chartered or organized under the laws of any state of the United States of America, the Government National Mortgage Association or any successor thereto, the Federal National Mortgage Association or any successor thereto, or any other federal agency or instrumentality approved by the City and County or a Counterparty.

*"Support Facility Reimbursement Obligation"* means the obligation of the City and County described in the First Resolution to directly reimburse the Support Facility Provider of a Support Facility for amounts paid thereunder or a Counterparty under an Interest Rate Exchange Agreement for amounts paid thereunder, whether or not such obligation to reimburse is evidenced by a promissory note or other similar instrument.

*"Tax-exempt Bonds"* means Bonds the interest on which is intended by the City and County to be excluded from gross income of the holders of such Bonds for federal income taxation purposes pursuant to the Code.

*"Term Bonds"* means Bonds, the retirement or the redemption of which is to be provided for from moneys credited to the Debt Service Account pursuant to the First Resolution.

*"Variable Rate Bonds"* means any Bonds issued bearing interest at a rate per annum subject to adjustment from time to time based on the terms thereof, based upon an index, or otherwise calculated in a manner which precludes the actual rate for the entire term of such Bonds from being ascertainable in advance as provided for in the First Resolution.

*"Wastewater System"* means all plants and properties, both real and personal and tangible and intangible, now or hereafter existing, under the management, control or jurisdiction of the Department, used for, useful in, or pertaining to the collection, pretreatment, advanced primary treatment, primary treatment, secondary treatment, tertiary treatment, purification, conveyance, storage, drainage, discharge and disposal of sewage, water, wastewater, stormwater, influent, effluent, or other liquids or suspended solids, or incidental or necessary to the preservation of the City and County's or the Department's wastewater conveyance facilities, wastewater treatment plants, wastewater disposal facilities, storm drains and sewers, sewage pump stations, sewage treatment plants, sewers, interceptors, outfall and other related facilities and plants, and the integrity thereof. The terms used in the preceding sentence have the meanings as ascribed to them in the City Code. Without limiting the generality of the foregoing, the Wastewater System includes: (1) the existing plants and properties comprising the Wastewater System under the management, control or jurisdiction of the Department, as of the date of adoption of the First Resolution; and (2) all Improvements thereafter constructed or otherwise acquired, purchased or annexed.

*"Wastewater System Facility Charge"* has the meaning specified in the City Code.

#### **Pledge Made in the First Resolution**

The Bonds are payable solely from and secured by the funds pledged therefor under the First Resolution. The City and County has pledged as security for the payment of the principal of, Redemption Price, if any, and interest on the Bonds in accordance with their terms and the provisions of the First Resolution, subject only to the provisions of the First Resolution permitting the application thereof for the purposes and on the terms and conditions set forth in the First Resolution: (i) the proceeds of sale of the Bonds pending application thereof in accordance with the provisions of the First Resolution or of a Series Resolution or a Series Certificate; (ii) the Net Revenues; and (iii) all Funds and Accounts held under the First Resolution other than the Rebate Account, the Subordinate Obligation Account, the Reimbursable Obligation Account, with respect to any Series of Bonds not entitled to the benefit of a Separate Series Reserve Account, such Separate Series Reserve Account, and with respect to any Series of Bonds not entitled to the benefit of the Common Reserve Account, the Common Reserve Account, including the investments, if any, in such Funds and Accounts; and the Bondholders have a lien on, and a security interest in, such proceeds, Net Revenues and Funds and Accounts for such purpose and subject to such provisions of the First Resolution. Such lien and security interest for the payment of Bonds are prior and superior to the lien and security interest for the payment of Subordinate Obligations and Reimbursable Obligations.

The First Resolution provides that each of the obligations, duties, limitations and restraints imposed upon the City and County by the First Resolution is deemed to be a covenant between the City and County and every Holder of the Bonds, and the First Resolution and every provision and covenant set forth in the First Resolution is deemed to be and constitute a continuing contract and agreement between the City and County and the Holders from time to time of the Bonds issued under the First Resolution, to secure the full and final payment of the principal and redemption price of and interest on all Bonds which may from time to time be issued, executed, and delivered under the First Resolution. The covenants and agreements set forth in the First Resolution to be performed by the City and County are for the equal and proportionate benefit, security and protection of all Holders of the Bonds without

preference, priority or distinction as to payment or security or otherwise of any of the Bonds over any of the others for any reason or cause whatsoever except as expressly provided in the First Resolution, in a Series Resolution, a Series Certificate or a Supplemental Resolution, or in the Bonds.

### **Additional Bonds**

*Basic Test.* One or more Series of Bonds (exclusive of refunding Bonds) may be issued at any time and from time to time for any lawful use or purpose relating to the Wastewater System, including, without limitation, payment of all or a portion of the Costs of Improvements, but only upon compliance as to each such Series with the provisions set forth in the First Resolution, including, among other things, delivery to the Director of Budget and Fiscal Services of the following documents or moneys or securities:

1. A written certificate of the City and County stating the amount required to be in the Common Reserve Account after issuance of the Bonds then to be issued, and that after deposit in the Common Reserve Account of the amount, if any, to be deposited therein in connection with the issuance of such Bonds, the amounts on deposit in the Common Reserve Account will not be less than the Common Reserve Account Requirement.

2. A written certificate of the City and County stating the amount required to be in the Separate Series Reserve Account created, if any, to provide additional security for the Bonds of such Series after issuance of the Bonds then to be issued, and that after deposit in such Separate Series Reserve Account of the amount to be deposited therein in connection with the issuance of such Bonds, the amounts on deposit in such Separate Series Reserve Account will not be less than the Separate Series Reserve Account Requirement for such Separate Series Reserve Account.

3. Either (I) a written certificate of the City and County based: (i) on audited figures or (ii) to the extent audited figures are not available, on figures taken by an independent certified public accountant from the Department's books and records, showing that the Net Revenues for: (a) the most recent Fiscal Year, or (b) any consecutive 12-months' period out of 24 months immediately preceding the month in which such Bonds are issued were not less than the greater of: (x) the sum of (1) the maximum Aggregate Debt Service on all Bonds then Outstanding and on the proposed Series of Bonds in any Fiscal Year and the 12-month period selected and (2) the Required Deposits for such Fiscal Year or the 12-month period selected; and (y) 1.20 times the maximum Aggregate Debt Service on all Bonds then Outstanding and on the proposed Series of Bonds in any Fiscal Year and the 12-month period selected, plus 1.00 times the aggregate Support Facility Reimbursement Obligations outstanding as of the date of the written certificate of the City and County, or (II) a written certificate of the City and County or Certificate of the Consulting Engineer that the Net Revenues to be derived in each of the five (5) Fiscal Years following the earlier of: (i) the end of the period during which interest is capitalized or, if no interest is to be capitalized, the Fiscal Year in which the proposed Series of Bonds are issued, and (ii) the date on which substantially all Improvements to be financed with the proceeds of the proposed Series of Bonds are expected to commence operations, or, if the proceeds of such Series of Bonds will not be used to fund the Costs of Improvements, the Fiscal Year in which the proposed Series of Bonds are issued, are estimated to be not less than the greater of: (x) the sum of (1) the maximum Aggregate Debt Service on all Bonds then Outstanding and on the proposed Series of Bonds in any such Fiscal Year, and (2) the Required Deposits for any such Fiscal Year; and (y) 1.20 times the maximum Aggregate Debt Service on all Bonds then Outstanding and on the proposed Series of Bonds in any such Fiscal Year, plus 1.00 times the aggregate Support Facility Reimbursement Obligations outstanding as of the date of such written certificate of the City and County or certificate of the Consulting Engineer, as the case may be.

The provisions of the First Resolution described in item 3 above do not apply to the Series 2001 Bonds.

*Certain Adjustments.* The First Resolution permits and requires certain adjustments to be made in determining whether the Basic Test described above for the issuance of Bonds other than Refunding Bonds is met.

1. In determining Debt Service on Variable Rate Bonds then Outstanding and Variable Rate Bonds then proposed to be issued for purposes of the Basic Test described above, the interest rate is to be

calculated as: (i) if any Variable Rate Bonds are then Outstanding and have been Outstanding for at least 24 months, the highest average interest rate borne by such Variable Rate Bonds for any 30-day period or if no such Variable Rate Bonds are then Outstanding, the Revenue Bond Index at the time of calculation.

2. Bond Anticipation Notes then Outstanding are to be treated as Bonds. In determining Debt Service on such Bond Anticipation Notes, such Bond Anticipation Notes are assumed to mature in 30 years and bear interest equal to the Revenue Bond Index at the time of calculation.

3. Subordinate Obligations and Reimbursable Obligations originally issued with a maturity of five (5) years or less are assumed to mature in 30 years and bear interest equal to the Revenue Bond Index at the time of calculation.

4. In preparing the certificate required by the Basic Test described above, the Authorized Officer or the Consulting Engineer, as applicable, may make adjustments to the Net Revenues as follows:

a. If any changes have been made in the schedule of rates and charges imposed by the City and County for commodities and services furnished by the Wastewater System which are in effect at the time of adoption of the Series Resolution authorizing the issuance of the Bonds then being issued and were placed into effect subsequent to the start of the Fiscal Year or the 12-month period selected pursuant to item 3 of the *Basic Test* described above, the Authorized Officer, may, if such changes result in increases in such rates and charges, and must, if such changes result in reductions in such rates and charges, adjust the Net Revenues for such period to reflect any change in such Net Revenues which would have occurred if the schedule of rates and charges in effect at the time of the adoption of the Series Resolution providing for the issuance of such Bonds had been in effect during the portion of such period in which such schedule was not in effect.

b. If customers are being served by the Department at the time of adoption of the Series Resolution authorizing the issuance of the Bonds then being issued and who were added to the Wastewater System subsequent to the start of the Fiscal Year or the 12-month period selected pursuant to item 3 of the *Basic Test* described above, the Authorized Officer may adjust the Net Revenues for such period to reflect any change in such Net Revenues which would have occurred if the additional customers had been served during the portion of the period in which such customers were not served.

c. If residential, commercial, industrial or institutional customers which are in existence are not then served by the Wastewater System at the time of adoption of the Series Resolution authorizing the issuance of the Bonds then being issued, but are then expected to be served during the five (5) Fiscal Years covered by such certificate, the Authorized Officer or the Consulting Engineer, as applicable, must estimate the effect which such new customers would have had on the Net Revenues for the period selected pursuant to item 3 of the *Basic Test* described above, if such new customers had been served during the entire period and may adjust the Net Revenues for such period to give effect to such new customers. Any such estimate will be based upon the operating experience and records of the Department with respect to the Wastewater System and upon any available financial and quarterly statistics deemed pertinent by the Authorized Officer or the Consulting Engineer, as applicable.

d. If any long-term, guaranteed contracts with customers of the Wastewater System are in effect at the time of adoption of the Series Resolution authorizing the issuance of the Bonds then being issued and which were entered into subsequent to the start of the Fiscal Year or 12-month period selected pursuant to item 3 of the *Basic Test* described above, the Authorized Officer may adjust the Net Revenues for such period to reflect any change in such Net Revenues which would have occurred if such contracts had been in effect for the entire period.

e. In rendering the certificate required pursuant to item 3 of the Basic Test, the Authorized Officer or the Consulting Engineer, as applicable, must deem the Operation and



Maintenance Expenses for the Wastewater System for the first Fiscal Year of the five (5) year period to be equal to such Operation and Maintenance Expenses for the Fiscal Year immediately preceding the Fiscal Year in which the proposed Series of Bonds is to be delivered, and thereafter the Authorized Officer or the Consulting Engineer, as applicable, must adjust, if deemed necessary, for any increased Operation and Maintenance Expenses which are estimated to occur during any subsequent Fiscal Year during the five (5) year period and are, in the judgement of the Authorized Officer or the Consulting Engineer, as applicable, essential to maintaining and operating the Wastewater System.

f. In rendering any certificate pursuant to the First Resolution, the Authorized Officer or the Consulting Engineer, as applicable, may rely upon estimates from other sources which the Authorized Officer or the Consulting Engineer, considers reliable, making such adjustments and provisions for contingencies based on similar projects and other considerations as deemed appropriate by such Authorized Officer or the Consulting Engineer.

### **Refunding Bonds**

The City and County may issue a Series of refunding Bonds at any time for the purpose of refunding (including by purchase) all or any portion of Bonds Outstanding, including amounts to pay principal, redemption premium and interest to the date of maturity or redemption (or purchase) and the expense of issuing the refunding Bonds and of effecting such refunding if the conditions set forth in the First Resolution are complied with, including all of the conditions of the *Basic Test* described above, except that condition 3 need not be complied with if the maximum annual Debt Service in any Fiscal Year on the refunding Bonds proposed to be issued does not exceed maximum annual Debt Service in any Fiscal Year on the refunded Bonds by more than 10%.

The City and County may also issue a Series of refunding Bonds at any time for the purpose of refunding (including by purchase) all or any portion of outstanding Subordinate Obligations or Reimbursable Obligations, including amounts to pay principal, redemption premium and interest to the date of maturity or redemption (or purchase) and the expense of issuing the refunding Bonds and of effecting such refunding if the conditions set forth in the First Resolution are complied with, including all of the conditions of the *Basic Test* described above.

### **Bond Anticipation Notes**

Bond Anticipation Notes may be issued by the City and County at such time as the City and County shall have by a Series Resolution duly adopted authorized the issuance of Bonds under the First Resolution. No Bond Anticipation Notes may be issued unless there has been filed with the Director of Budget and Fiscal Services on or prior to the date of issuance of such Bond Anticipation Notes, a written certificate of the City and County to the effect that, based on market conditions expected to be prevailing at the time of issuance of the Series of Bonds in anticipation of which such Bond Anticipation Notes are issued and on other reasonable assumptions set forth in such written certificate, the provisions of the First Resolution for the issuance of additional Bonds other than refunding Bonds are expected to be complied with at the time of issuance of such Series of Bonds. The maximum maturity of any Bond Anticipation Notes, including the renewals thereof, must not exceed five years from the date of the original Bond Anticipation Note. The principal of Bond Anticipation Notes may be paid from the proceeds of such Bond Anticipation Notes (or any renewal thereof) or from the proceeds of the Bonds in anticipation of which such Bond Anticipation Notes were issued. The interest on such Bond Anticipation Notes may be secured by a lien on and pledge of, and be paid from, the Net Revenues on a parity with the lien on and pledge of the Net Revenues created in the First Resolution for the payment and security of the Bonds. The principal of Bond Anticipation Notes will be secured by a lien on and pledge of the proceeds of the Bonds in anticipation of which such Bond Anticipation Notes were issued and any such pledge will have priority over any other pledge of such proceeds created by the First Resolution. Bond Anticipation Notes issued under the First Resolution are to be treated as Bonds for all purposes of the First Resolution, and are to be payable from the Debt Service Account, except to the extent that the principal of any such Bond Anticipation Note is paid from the proceeds of other Bond Anticipation Note or from the proceeds of Bonds.

## Subordinate Obligations

The City and County may issue Subordinate Obligations which are payable out of, and which may be secured by a pledge of, such amounts in the Subordinate Obligation Account as may from time to time be available for the purpose of payment. The City and County may, by resolution, provide for various priorities in the liens and pledges securing Subordinate Obligations, and nothing in the First Resolution shall be construed so as to require that the payment of, or pledges securing, Subordinate Obligations be on a parity *inter se*.

The City and County may also issue Subordinate Obligations: (i) to refund any Subordinate Obligations issued as provided in the First Resolution; (ii) to refund Outstanding Bonds; or (iii) to refund any Reimbursable Obligations. Such Subordinate Obligations issued for refunding purposes may be payable out of, and may be secured by a pledge of, such amounts in the Subordinate Obligations Fund or Wastewater General Account as may from time to time be available therefor.

The First Resolution requires that any resolution, indenture or other instrument securing or evidencing each issue of Subordinate Obligations must contain provisions (which shall be binding on all holders of such Subordinate Obligations) not more favorable to the holders of such Subordinate Obligations than as described below:

(1) In the event of any insolvency or bankruptcy proceedings, and any receivership, liquidation, reorganization or other similar proceedings in connection therewith, relative to the City and County or the Department, or to the property of the City and County or property operated by the Department, and in the event of any proceedings for voluntary liquidation, dissolution or other winding up of the City and County or the Department, the Holders of all Bonds then Outstanding will be entitled to receive payment in full of all principal and interest on all such Bonds before the holders of the Subordinate Obligations are entitled to receive any payment from the trust estate under the First Resolution consisting of the Net Revenues and funds held under the First Resolution (the "Trust Estate" for these purposes) on account of principal (and premium, if any) or interest on the Subordinate Obligations.

(2) In the event that any issue of Subordinate Obligations is declared due and payable before its expressed maturity because of the occurrence of an event of default (under circumstances when the provisions of (1) above are not applicable), the Holders of all Bonds Outstanding at the time such Subordinate Obligations so become due and payable because of such occurrence of such an event of default will be entitled to receive payment in full of all principal and interest on all such Bonds before the holders of the Subordinate Obligations are entitled to receive any accelerated payment from the Trust Estate of principal (and premium, if any) or interest on the Subordinate Obligations.

(3) If any Event of Default with respect to the Bonds has occurred and be continuing (under circumstances when the provisions of (1) above are not applicable), the Holders of all Bonds then Outstanding will be entitled to receive payment in full of all principal and interest on all such Bonds before the holders of the Subordinate Obligations are entitled to receive any accelerated payment from the Trust Estate of principal (and premium, if any) or interest on the Subordinate Obligations.

(4) No Bondholder shall be prejudiced in his right to enforce subordination of the Subordinate Obligations by any act or failure to act on the part of the City and County.

(5) The Subordinate Obligations may provide that the provisions of (1), (2), (3) and (4) above are solely for the purpose of defining the relative rights of the Bondholders on the one hand, and the holders of Subordinate Obligations on the other hand, and nothing therein shall impair, as between the City and County and the owners of the Subordinate Obligations, the obligation of the City and County to pay to the owners thereof the principal thereof and premium, if any, and interest thereon in accordance with its terms, nor shall anything therein prevent the holders of the Subordinate Obligations from exercising all remedies otherwise permitted by applicable law or thereunder upon default thereunder, subject to the rights under (1), (2), (3) and (4) above of the Holders of Bonds to receive cash, property or securities otherwise payable or deliverable to the holders of the Subordinate Obligations; and the Subordinate Obligations may provide that, insofar as a trustee or paying agent for such Subordinate Obligations is concerned, the foregoing provisions shall not prevent the application by such trustee or paying agent of any moneys

deposited with such trustee or paying agent for the purpose of the payment of or on account of the principal (and premium, if any) and interest on such Subordinate Obligations if such trustee or paying agent did not have knowledge at the time of such application that such payment was prohibited by the foregoing provisions.

Any issue of Subordinate Obligations may have such rank or priority with respect to any other issue of Subordinate Obligations as may be provided in the resolution, indenture or other instrument securing such issue of Subordinate Obligations and may contain such other provisions as are not in conflict with the provisions of the First Resolution.

### **Reimbursable Obligations**

The obligation for the payment of Reimbursable Obligations shall be: (i) after and inferior to the lien and security interest for the payment of Bonds and those Subordinate Obligations which are payable from the Subordinate Obligation Account; and (ii) prior and superior to the lien and security interest for the payment of those Subordinate Obligations which are payable from the Wastewater General Account. Reimbursable Obligations are payable from the Reimbursable Obligation Account.

### **Support Facilities and Interest Rate Exchange Agreements**

In connection with the issuance of any Series of Bonds and to the extent permitted by law, the City and County may obtain or cause to be obtained from one or more Support Facility Providers one or more Support Facilities providing for payment of all or a portion of the purchase price or principal, premium, if any, or interest due or to become due on specified Bonds of such Series, or providing for the purchase of such Bonds or a portion of such Bonds by such Support Facility Providers, or providing, in whole or in part, for the funding of the Common Reserve Account or a Separate Series Reserve Account pursuant to the First Resolution.

In connection with the issuance of any Series of Bonds or to better manage its assets and liabilities and, to the extent permitted by law, the City and County may enter into with one or more Counterparties one or more Interest Rate Exchange Agreements; *provided* that no such Interest Rate Exchange Agreement shall adversely affect the exclusion from gross income for purposes of federal income taxation of interest on the Tax-exempt Bonds of any Series.

The City and County may enter into agreements with one or more Support Facility Providers or Counterparties to provide for, among other things: (i) the payment of fees and expenses to such Support Facility Providers or Counterparties; (ii) the terms and conditions of such Support Facility or Interest Rate Exchange Agreement and the Series of Bonds affected thereby; and (iii) the security, if any, to be provided to such Support Facility Providers or Counterparties. The City and County may secure the Support Facility or Interest Rate Exchange Agreement by an agreement providing for the purchase of the Bonds secured thereby with such adjustments to the rate of interest, method of determining interest, maturity, or redemption provisions as specified in the Series Resolution or the Series Certificate. Debt Service with respect to any Bonds so secured is to be calculated for purposes of the definition of Common Reserve Account Requirement by using the Assumed Long-Term Fixed Rate.

The City and County may also agree in any agreement with the Support Facility Provider of such Support Facility or the Counterparty under an Interest Rate Exchange Agreement to reimburse directly such Support Facility Provider or Counterparty for any amounts paid under the terms of such Support Facility or Interest Rate Exchange Agreement, together with interest thereon (the "Support Facility Reimbursement Obligation"); *provided, however*, that no Support Facility Reimbursement Obligation is to be created, for purposes of the First Resolution, until amounts are paid under such Support Facility or Interest Rate Exchange Agreement, as the case may be. Any such Support Facility Reimbursement Obligation may be secured by a lien on and pledge of the Net Revenues on a parity with the lien on and pledge of the Net Revenues created by the First Resolution with respect to the Bonds (a "Parity Support Facility Reimbursement Obligation"). Any such Parity Support Facility Reimbursement Obligation will be deemed to be a part of the Series of Bonds to which the Support Facility which gave rise to such Parity Support Facility Reimbursement Obligation relates. Payment of Support Facility Reimbursement Obligation may be made out of the Sewer Fund as provided in the First Resolution.

Any Support Facility deposited in the Common Reserve Account or the long-term debt of the Support Facility Provider of such Support Facility must, in each case, be in the highest rating category each Rating Agency, and if rated by A.M. Best & Company, also be rated in the highest rating category by A.M. Best & Company or its successors. In the event any Support Facility deposited in the Common Reserve Account or the long-term debt of the issuer of any Support Facility deposited in the Common Reserve Account falls below the highest rating category of each Rating Agency, and A.M. Best & Company, if rated by A.M. Best & Company, the City and County must, within 120 days, obtain a new Support Facility which is rated in the highest category of each Rating Agency or for which the long-term debt of the issuer of such new Support Facility is rated in the highest rating category of each Rating Agency and A.M. Best & Company, if rated by A.M. Best & Company; provided, however, that if the new Support Facility is not obtained within 120 days, the City and County must deposit in the Common Reserve Account Net Revenues in the amount provided in the First Resolution. If a disbursement is made pursuant to a Support Facility deposited in the Common Reserve Account, the City and County must: first, reinstate the full amount of such Support Facility; and second, if necessary deposit Net Revenues in the Common Reserve Account in the amount of the disbursement made under such Support Facility, in either case such that the amount in the Common Reserve Account is equal to the Common Reserve Account Requirement within a period of time not longer than would be required to restore the Common Reserve Account by application of moneys in the Sewer Fund. The City and County may at any time deposit cash or Investment Securities as replacement for one or more Support Facilities.

The City and County must obtain and maintain in effect one or more Support Facilities for Option Bonds. The City and County must obtain a replacement Support Facility to replace any Support Facility for Option Bonds that is expiring, not renewed or terminated. Procedures for such replacement, maintenance and notices to Bondholders, rating agencies or other persons are to be provided in the Series Resolution authorizing the Series of Bonds or the Series Certificate relating to such Bonds.

#### **Funds and Accounts**

The City and County has established by ordinances the Sewer Fund and the Sewer Revenue Bond Improvement Fund (the "Improvement Fund"). The First Resolution establishes the following accounts in the Sewer Fund:

- Wastewater System Facility Charge Account,
- Debt Service Account,
- Common Reserve Account,
- Rebate Account,
- Rate Stabilization Account,
- Subordinate Obligation Account,
- Reimbursable Obligation Account,
- Renewal and Replacement Account, and
- Wastewater General Account.

The First Resolution permits the creation and establishment of one or more Separate Series Reserve Accounts in the Sewer Fund. The First Resolution also permits the establishment of one or more Series Improvement Subaccounts in the Improvement Account and requires the establishment of one or more Series Improvement Interest Subaccounts in the Improvement Account if interest on the Bonds of a Series is to be paid from the proceeds of such Bonds during the period of construction of any Improvements and for six months thereafter.

#### **Sewer Fund**

Revenues and Wastewater System Facility Charges will be collected by the Department and deposited into the Sewer Fund. From the amounts deposited in the Sewer Fund, the Department will transfer all moneys collected as Wastewater System Facility Charges to the Wastewater System Facility Charge Account, pay the current Operation and Maintenance Expenses, transfer to the Rebate Account such amount as is necessary to pay the rebate amount due the United States Treasury Department under Section 148 of the Code or to set aside as a reserve for such payment and make the transfers to other funds and accounts as provided in the First Resolution. In addition, all other amounts required by the City Charter and the First Resolution to be deposited in the Sewer Fund will be so deposited.

In each month, the City and County, after making the transfer, if any, to the Wastewater System Facility Charge Account of all moneys received as Wastewater System Facility Charges, after paying or setting aside a sufficient amount to pay the Operating and Maintenance Expenses and making the transfer to the Rebate Account as described above, will retain, apply or transfer on the 5th day preceding the end of each month a sufficient amount of moneys in the Sewer Fund, in the following order of priority:

*First*, to the Debt Service Account, if and to the extent required so that the balance in the Debt Service Account will be equal to the Accrued Debt Service for all Bonds Outstanding and the interest accrued on all Bond Anticipation Notes outstanding on said date;

*Second*, (a) to the Common Reserve Account, if and to the extent required, either (i) an amount such that the balance in the Common Reserve Account will be equal to the Common Reserve Account Requirement on such date, or (ii) an amount such that if the same amount were deposited in each month the amount of any deficiency in the Common Reserve Account will be eliminated at the end of the sixth (6th) month following the first credit; and (b) to each Separate Series Reserve Account, if and to the extent required, either (i) an amount such that the balance in each Separate Series Reserve Account will be equal to the Separate Series Reserve Account Requirement for each Separate Series Reserve Account on such date, or (ii) an amount such that if the same amount were deposited in each month the amount of any deficiency in each Separate Series Common Reserve Account will be eliminated at the end of the sixth (6th) month following the first credit; provided, however, that such transfers shall be pro rata, based on the proportion of the Common Reserve Account Requirement and each Separate Series Reserve Account Requirement to the sum of the Common Reserve Account Requirement and all Separate Series Reserve Account Requirements;

*Third*, in the Sewer Fund, a reasonable and necessary amount for working capital and operating reserves;

*Fourth*, to the Subordinate Obligation Account, the amount, if any, equal to all Subordinate Obligation Requirements theretofore accrued and unpaid and not met from any other source and to accrue and become payable during the succeeding calendar month and not met from any other source;

*Fifth*, to the Reimbursable Obligation Account, the amount, if any, equal to all Reimbursable Obligation Requirements payable on such day and not met from any other source;

*Sixth*, to the Renewal and Replacement Account, an amount equal to 1/12th of the amount provided in the Annual Budget of the City and County to be credited to such Account during such Fiscal Year; provided, however, that if any such monthly allocation to the Renewal and Replacement Account is less than the required amount, the amount of the next succeeding monthly payment must be increased by the amount of such deficiency;

*Seventh*, to the Wastewater System Facility Charge Account, such amount as is set forth in a written certificate to reimburse such Account for the amount of any transfer to the Debt Service Account made pursuant to the First Resolution;

*Eighth*, to the Rate Stabilization Account, such amount as is provided in the Annual Budget to be transferred to the Rate Stabilization Account in such month or so much thereof as is available; provided, however, that if any such monthly allocation to the Rate Stabilization Account is less than the required amount, the amount of the next succeeding monthly payment must be increased by the amount of such deficiency; and

*Ninth*, to the Wastewater General Account, such amount as is forth in a written certificate of the City and County.

The City and County may, if provided in a Series Resolution or a Series Certificate relating to such Bonds, directly pay out of the Sewer Fund reimbursements to providers of Support Facilities which have been drawn upon in the same priority and order as payments from the Sewer Fund to the Debt Service Account, the Common Reserve

Account, each Separate Series Reserve Account or other Funds and Accounts as if such payments were part of such Funds and Accounts.

#### **Purposes of the Various Funds and Account**

*Sewer Fund - Debt Service Account.* The principal of and interest on, any Sinking Fund Installment, the Redemption Price of and interest on the Bonds and interest on Bond Anticipation Notes are to be paid out of the Debt Service Account in the Sewer Fund to each Paying Agent on or before the respective due dates.

Amounts accumulated in the Debt Service Account by reason of the payment of any Sinking Fund Installment may be applied by the City and County, on or prior to the 60th day preceding the due date of such Sinking Fund Installment, to: (i) the purchase of Bonds of the maturity for which such Sinking Fund Installment was established, or (ii) the redemption of such Bonds at the applicable Redemption Price, if then redeemable by their terms. All such purchases of Bonds are to: (i) be made at prices not exceeding the applicable Redemption Price of such Bonds plus accrued interest; (ii) be made as arranged by the City and County in such manner and from such sellers or brokers at such prices as the City and County may determine; and (iii) be made to insure that delivery of the Bonds so purchased will not occur later than the 60th day next preceding the redemption date to which the Sinking Fund Installment is to be applied. The applicable Redemption Price of any Bonds (or principal amount of maturing Bonds) so purchased or redeemed is deemed to constitute part of the Debt Service Account until such Sinking Fund Installment date, for the purpose of calculating the amount of such Account. As soon as practicable after the 60th day preceding the due date of any such Sinking Fund Installment, the City and County must proceed to call for redemption on such due date Bonds of the maturity for which such Sinking Fund Installment was established (except in the case of Bonds maturing on a Sinking Fund Installment date) in such amount as is necessary to complete the retirement of the unsatisfied balance of such Sinking Fund Installment after making allowance for any Bonds purchased or redeemed pursuant to the First Resolution which the City and County has applied as a credit against such Sinking Fund Installment as provided in the First Resolution.

Upon any purchase or redemption pursuant to the First Resolution of Bonds of any Series and maturity for which Sinking Fund Installments shall have been established: (i) if the principal amount of the Bonds so purchased is less than or equal to the next succeeding Sinking Fund Installment for such Series there is to be credited to the next such Sinking Fund Installment an amount equal to the principal amount of the Bonds of such Series so purchased; and (ii) if the principal amount of the Bonds so purchased is greater than the next succeeding Sinking Fund Installment, there is to be credited toward each such Sinking Fund Installment thereafter to become due an amount bearing the same ratio to such Sinking Fund Installment as the total principal amount of such Bonds so purchased or redeemed bears to the total principal amount of all such Sinking Fund Installments to be so credited or, at the option of the City and County, an amount equal to the next succeeding Sinking Fund Installment. The portion of any such Sinking Fund Installment remaining after the deduction of any such amounts credited toward the same (or the original amount of any such Sinking Fund Installment if no such amounts have been credited toward the same) will constitute the unsatisfied balance of such Sinking Fund Installment for the purpose of calculation of Sinking Fund Installments due on a future date.

The amount, if any, credited to the Debt Service Account from a Series Improvement Interest Subaccount is to be applied to the payment of interest on the Bonds as the same becomes due and payable as provided in the First Resolution.

*Sewer Fund - Common Reserve Account.* If on the day preceding any principal or interest payment date, the amount in the Debt Service Account is less than the Accrued Debt Service for all Bonds then Outstanding which are entitled to the benefit of the Common Reserve Account, the City and County will pay out of the Common Reserve Account to each Paying Agent for such Bonds the amount necessary to satisfy the deficiency for payment to the holders of such Bonds. Amounts so applied are to be derived first, from cash or Investments Securities on credit to the Common Reserve Account and second, from draws or demands on Support Facilities held as a part of the Common Reserve Account, such draws or demands to be made *pro rata* among all such Support Facilities based on the respective available amounts under such Support Facilities and upon the terms and conditions set forth in such Support Facilities.

Whenever the amounts on deposit in the Common Reserve Account exceed the Common Reserve Account Requirement, the City and County will withdraw the amount of such excess and deposit such excess to the credit of the Debt Service Account or the Sewer Fund, as the City and County may determine.

Whenever the amount (exclusive of Support Facilities) in the Common Reserve Account, together with the amount in the Debt Service Account attributable to Bonds entitled to the benefit of the Common Reserve Account, is sufficient to pay in full the principal or Redemption Price, if any, of and interest on all such Outstanding Bonds in accordance with their terms, the funds on credit to the Common Reserve Account are to be transferred to the Debt Service Account and applied to make such payment. Prior to such transfer, all Investment Securities held in the Common Reserve Account will to be liquidated by the City and County to the extent necessary to provide for timely payment of the principal or Redemption Price, if any, of and interest on such Bonds.

When a Series of Bonds entitled to the benefit of the Common Reserve Account are refunded in whole or in part or is otherwise deemed paid within the meaning of the First Resolution, moneys may be withdrawn from the Common Reserve Account to pay or provide for the payment of such Bonds or refunded Bonds, as the case may be; provided that immediately after such withdrawal or transfer there must be on credit to the Common Reserve Account for those Bonds of the Series of Bonds not refunded an amount equal to the Common Reserve Account Requirement for the Bonds entitled to the benefit of the Common Reserve Account then Outstanding after taking into account such refunding or payment.

The City and County may determine in the Series Resolution authorizing a Series of Bonds or a Series Certificate related to a Series of Bonds that such Series of Bonds will not be entitled to the benefit of the Common Reserve Account, in which case no amount will be required from the proceeds of such Series of Bonds for credit to the Common Reserve Account and no amount will be payable from the Common Reserve Account to pay amounts due or payable with respect to such Series of Bonds.

The Common Reserve Account Requirement is to be calculated or recalculated: (i) at the time of issuance of a Series of Bonds (or Bond Anticipation Notes); (ii) at the time a Series of Bonds is retired in its entirety; (iii) at such other time as in the Opinion of Counsel is required to maintain the exclusion of interest on the Tax-exempt Bonds from gross income for federal income taxation purposes.

*Sewer Fund - Separate Series Reserve Accounts.* If on the day preceding any principal or interest payment date, the amount in the Debt Service Account is less than Accrued Debt Service for the Bonds of a Series then Outstanding which are entitled to the benefit of a Separate Series Reserve Account, the City and County will pay out of such Separate Series Reserve Account to the Paying Agent for such Bonds the amount necessary to satisfy the deficiency for payment to the holders of such Bonds. Amounts so applied shall be derived first, from cash or Investments Securities on credit to such Separate Series Reserve Account and second, from draws or demands on Support Facilities held as a part thereof, such draws or demands to be made *pro rata* among all such Support Facilities based on the respective available amounts under such Support Facilities and upon the terms and conditions set forth in such Support Facilities.

Whenever the amounts on deposit in any Separate Series Reserve Account exceed the applicable Separate Series Reserve Account Requirement, the City and County will withdraw the amount of such excess and deposit such excess to the credit of the Debt Service Account or the Sewer Fund, as the City and County may determine.

Whenever the amount (exclusive of Support Facilities) in any Separate Series Reserve Account, together with the amount in the Debt Service Account attributable to Bonds entitled to the benefit of such Separate Series Reserve Account, is sufficient to pay in full the principal or Redemption Price, if any, of and interest on all such Outstanding Bonds in accordance with their terms, the funds on credit to such Separate Series Reserve Account are to be transferred to the Debt Service Account and applied to make such payment. Prior to such transfer, all Investment Securities held in such Separate Series Reserve Account will be liquidated by the City and County to the extent necessary to provide for timely payment of the principal or Redemption Price of and interest on such Bonds.

When a Series of Bonds entitled to the benefit of the Separate Series Reserve Account are refunded in whole or in part or are otherwise deemed paid within the meaning of the First Resolution, moneys may be withdrawn from such Separate Series Reserve Account to pay or provide for the payment of such Bonds or refunded

Bonds, as the case may be; *provided* that immediately after such withdrawal or transfer there must be on credit to such Separate Series Reserve Account an amount equal to the Separate Series Reserve Account Requirement for the Bonds then Outstanding which are entitled to the benefit of such Separate Series Reserve Account after taking into account such refunding or payment.

Each Separate Series Reserve Account Requirement is to be calculated or recalculated: (i) at the time of issuance of a Series of Bonds (or Bond Anticipation Notes); (ii) at the time a Series of Bonds is retired in its entirety; (iii) at such other time as in the Opinion of Counsel is required to maintain the exclusion of interest on the Tax-exempt Bonds from gross income for federal income taxation purposes.

Certain provisions of the First Resolution relating to Separate Series Reserve Account may be modified in whole or in part with respect to any Series of Bonds entitled to the benefits of a Separate Series Reserve Account.

*Sewer Fund - Rebate Account.* If and to the extent required by the Code, an Authorized Officer must periodically, at such times as may be required to comply with the Code, determine the amount required to be rebated or otherwise paid to the Department of the Treasury of the United States of America with respect to each Series of Tax-exempt Bonds and thereafter (i) transfer from any of the Funds and Accounts pledged or held under the First Resolution, other than the Debt Service Account, the Subordinate Obligation Account and the Reimbursable Obligation Account and credit to the Rebate Account an amount equal to all or a portion of such amount to be rebated with respect to such Series of Bonds and (ii) pay out of the Rebate Account to the Department of the Treasury of the United States of America the amount, if any, required by the Code to be rebated or otherwise paid. Moneys in the Rebate Account and the subaccounts therein are not available for the benefit of the Holders of the Bonds and are not pledged to the payment of the Bonds or the interest thereon.

If and to the extent necessary to comply with any covenant established in a Series Resolution authorizing a Series of Bonds or in a Series Certificate relating to such Series of Bonds regarding maintaining the exclusion of interest on Tax-exempt Bonds from gross income for Federal income taxation purposes, the City and County may establish a subaccount in the Rebate Account with respect to such Series of Bonds or provide for the establishment such subaccount in such Series Resolution or in such Series Certificate.

*Sewer Fund - Rate Stabilization Account.* The amount of moneys and Investment Securities to be maintained from time to time in the Rate Stabilization Account is to be provided for in the Annual Budget. Moneys and Investment Securities may be transferred to the Rate Stabilization Account as provided in the Annual Budget from (i) the Sewer Fund in the order of priority provided in the First Resolution, or (ii) the Wastewater General Account as provided in the First Resolution. Moneys and Investment Securities credited to the Rate Stabilization Account are to be transferred to the Sewer Fund at the times and in the amounts as may be provided in the Annual Budget for the purposes of stabilizing the rates and charges of the Wastewater System.

*Sewer Fund - Renewal and Replacement Account.* Moneys on credit to the Renewal and Replacement Account may be applied to the cost of the construction of improvements to or reconstruction of the Wastewater System, emergency repairs of the Wastewater System, and major or extraordinary repairs, renewals or replacements of the Wastewater System, in each case to be set forth in the Annual Budget, (i) to restore or prevent physical damage to the Wastewater System or any part thereof; (ii) for the safe and efficient operation of the Wastewater System; or (iii) to prevent loss of Revenues.

If on the day preceding any interest payment date the moneys in the Debt Service Account, after making the transfer from the Common Reserve Account from each Separate Series Account as provided for in the First Resolution and from the Wastewater General Account as provided for in the First Resolution, are insufficient to pay the interest, principal and redemption price becoming due on the Bonds, the City and County must transfer from the Renewal and Replacement Account for credit to the Debt Service Account the amount necessary (or all the moneys in such Fund if less than the amount necessary) to satisfy such deficiency.

If on each January 1 and July 1 (i) the moneys, Investment Securities and the amount of Support Facilities in the Common Reserve Account are less than the Common Reserve Account Requirement, and the transfer referred to in the preceding paragraph has been made, the City and County must transfer from the Renewal and Replacement Account for credit to the Common Reserve Account the amount necessary (or all the moneys in such Account if less



than the amount necessary) to satisfy such deficiency; and (ii) the moneys, Investment Securities and amount of Support Facilities in any Separate Series Reserve Account are less than the Separate Series Reserve Account Requirement for such Separate Series Reserve Account, and the transfer referred to in the preceding paragraph has been made, the City and County must transfer from the Renewal and Replacement Account for credit to such Separate Series Reserve Account the amount necessary (or all the moneys in said Account if less than the amount necessary) to eliminate such deficiency; *provided, however*, that such transfers will be *pro rata*, based on the proportion of the Common Reserve Account Requirement and each Separate Series Reserve Account Requirement to the sum of the Common Reserve Account Requirement and all Separate Series Reserve Account Requirements.

If the moneys on credit to the Subordinate Obligation Account are less than the Subordinate Obligation Requirement, and the transfers referred to in the preceding two paragraphs have been made, the City and County will transfer from the Renewal and Replacement Account to the Subordinate Obligation Account the amount necessary (or all the moneys in such Account if less than the amount necessary) to satisfy such deficiency.

If the moneys on deposit in the Reimbursable Obligation Account are less than the Reimbursable Obligation Requirement, and the transfers referred to in the preceding three paragraphs have been made, the City and County must transfer from the Renewal and Replacement Account to the Reimbursable Obligation Account the amount necessary (or all the moneys in such Account if less than the amount necessary) to satisfy such deficiency.

*Sewer Fund - Subordinate Obligation Account.* The City and County must at all times maintain in the Subordinate Obligation Account an amount equal to the Subordinate Obligation Requirement. Moneys on deposit in the Subordinate Obligation Account will be applied by the City and County solely in accordance with the provisions of, and subject to the priorities and limitations and restrictions provided in the resolution, indenture or other instrument of the City and County securing or evidencing such Subordinate Obligations. Any moneys credited to the Subordinate Obligation Account are immediately free and clear of the lien and pledge created by the First Resolution.

*Sewer Fund - Reimbursable Obligation Account.* The City and County must at all times maintain in the Reimbursable Obligation Account an amount equal to the Reimbursable Obligation Requirement. Moneys on deposit in the Reimbursable Obligation Account will be applied by the City and County solely to reimburse the General Fund of the City and County for payment of debt service due on Reimbursable Obligation issued or to be issued by the City and County with respect to the Wastewater System. Any moneys deposited in the Reimbursable Obligation Account are immediately free and clear of the lien and pledge created by the First Resolution.

*Sewer Fund - Wastewater General Account.* The City and County will transfer from the Wastewater General Account: (i) to the Debt Service Account, the Common Reserve Account and each Separate Series Reserve Account the amount necessary (or all the moneys in the Wastewater General Account if less than the amount necessary) to satisfy any deficiencies in payments to such Accounts required by the First Resolution; (ii) in the event of any transfer of moneys from the Common Reserve Account or any Separate Series Reserve Account to the Debt Service Account, to the Common Reserve Account or such Separate Series Reserve Account the amount of any resulting deficiency in such Account; (iii) provided that all transfers referred to in clauses (i) and (ii) above have been made, to the Renewal and Replacement Account the amount, if any, necessary to satisfy the deficiency in such Fund; (iv) such amount as the City and County may, in its discretion, determine to set aside in reserve for meeting the deficiencies referred to in clauses (i) through (iii) above; (v) provided that all transfers and reserves therefor referred to in clauses (i) through (iv) above have been made, to the Subordinate Obligation Account the amount, if any, necessary to satisfy any deficiency in meeting the Subordinate Obligation Requirement; and (vi) provided that all transfers and reserves therefor referred to in clauses (i) through (v) above have been made, to the Reimbursable Obligation Account, the amount, if any, necessary to eliminate any deficiency in meeting the Reimbursable Obligation Requirement.

Amounts in the Wastewater General Account not required to meet a deficiency referred to in the preceding paragraph may be applied to the following purposes in the following order of priority:

- (1) the Costs of Improvements, or the provision of one or more reserves therefor;

- (2) for transfer to the Rate Stabilization Account in the Sewer Fund such amounts as may be provided in the Annual Budget for the purpose of stabilizing rates and charges;
- (3) the purchase at such price or prices as the City and County may deem advisable or redemption of any Bonds and expenses of such purchase or redemption at any time; and
- (4) for any other lawful purpose of the City and County.

*Sewer Revenue Bond Improvement Fund - Improvement Account.* As soon as practicable on the date of delivery of the Bonds of a Series, the amount required pursuant to the Series Resolution or Series Certificate will be deposited in the Improvement Fund for credit to the Improvement Account. In addition, the City and County will deposit in the Improvement Fund for credit to the Improvement Account such moneys other than proceeds of the Bonds as the City and County may determine to be proper or appropriate to pay the Costs of Improvements.

The Series Resolution authorizing the issuance of any Series of Bonds (exclusive of Refunding Bonds) may create and establish one or more separate special series improvement subaccounts (a "Series Improvement Subaccount") in the Improvement Account, with such designation as may be appropriate. In the event any interest on such Bonds is to be capitalized from the proceeds of such Bonds, a special series subaccount must be created in the Improvement Account (a "Series Improvement Interest Subaccount") with such designation as may be appropriate.

Moneys, including proceeds of the Bonds of a Series, which are credited to a Series Improvement Subaccount are to be applied to the payment of the Costs as are specified in the applicable Series Resolution or Series Certificate. Any balance remaining in such Series Improvement Subaccount upon completion of payment of such Costs may be used for any lawful purpose of the City and County; *provided* that the City and County has obtained an Opinion of Counsel that any such application will not impair the exemption from Federal income taxation of interest on any of the Tax-exempt Bonds.

Moneys credited to a Series Improvement Interest Subaccount are to be used for the purpose of paying interest on the Bonds of designated Series. On or before the fifth (5th) day preceding the end of the month next preceding the maturity of an installment of interest on the Bonds for the payment of which moneys have been credited to such Series Improvement Interest Subaccount, the City and County must transfer from a Series Improvement Interest Subaccount to the Debt Service Account an amount which, together with any moneys theretofore held in the Debt Service Account, are sufficient to pay such next maturing installment of interest on such Bonds.

Payments from the Improvement Account are to be made as specified in the Series Resolution authorizing the issuance of a Series of Bonds or a Series Certificate related to a Series of Bonds.

Moneys, including proceeds of the Bonds, in the Improvement Account, pending their application as provided in the First Resolution and Series Resolution and Series Certificate, are subject to a prior and paramount lien and charge in favor of the Holders of the Bonds, and the Holders of the Bonds have a valid claim on such moneys for the further security of the Bonds until paid out or transferred as provided in the First Resolution. In the event that there is an insufficiency in the Debt Service Account to pay Debt Service after all transfers, other than a transfer from the Wastewater System Facility Charge Account, have been made pursuant to and in accordance with the First Resolution, the City and County must transfer from the Improvement Account such amount (or all remaining amounts in such Improvement Account) as is deemed necessary by the Director of Budget and Fiscal Services for deposit in the Debt Service Account, which, together with the amounts then on credit to the Debt Service Account, is sufficient to pay Debt Service.

*Sewer Fund – Wastewater System Facility Charge Account.* Amounts in the Wastewater System Facility Charge Account and any account therein, pending their application, are subject to a prior and paramount lien and charge in favor of the Holders of the Bonds, and the Holders of the Bonds have a valid claim on such moneys for the further security of the Bonds until paid out or transferred as provided in the First Resolution. In the event that there is an insufficiency in the Debt Service Account to pay Debt Service after all transfers have been made pursuant to

and in accordance with the First Resolution, the City and County must transfer from the Wastewater System Facility Charge Account such amount (or all remaining amounts in the Wastewater System Facility Charge Account) as is deemed necessary by the Director of Budget and Fiscal Services for deposit in the Debt Service Account, which, together with the amounts then on deposit in the Debt Service Account, is sufficient to pay Debt Service. The amount of any such transfer must at the earliest practicable date be reimbursed to the Wastewater System Facility Charge Account as provided in the First Resolution.

Amounts held in the Wastewater System Facility Charge Account are to be expended for the purposes specified in Section 6-47.1 of the City Code.

#### **Investment of Funds**

Moneys in the Debt Service Account may, to the fullest extent practicable and reasonable, be invested and reinvested solely in noncallable Investment Securities which are Government Obligations, FNMAs or FHLMCs (as such terms are defined in the definition of Investment Securities) and which mature or are subject to redemption at the option of the holder thereof on or prior to the respective dates when the moneys in Debt Service Account will be required for the purposes intended. Moneys in the Common Reserve Account or any Separate Series Reserve Account not required for immediate disbursement for the purpose for which the Common Reserve Account or such Separate Series Reserve Account is created may, to the fullest extent practicable and reasonable, be invested and reinvested solely in, and obligations credited to the Common Reserve Account or such Separate Series Reserve Account must be, investments specified in items (i) to (vi), inclusive, of the definition of Investment Securities and which mature or are available at par at or prior to five (5) years from the date of investment thereof.

Moneys in the Sewer Fund not required for immediate disbursement for the purpose for which such Fund is created may, to the fullest extent practicable and reasonable, be invested and reinvested, to the extent allowed by law, solely in, and obligations deposited in such Fund will be, Investment Securities which mature or are subject to redemption or payment at par at the option of the holder thereof, not later than such times as will be necessary to provide moneys when needed to provide payments from such Fund.

Moneys in the Improvement Account, other than a Series Improvement Interest Subaccount therein, not required for immediate disbursement for the purposes for which such Account is created may, to the fullest extent practicable and reasonable, be invested and reinvested to the extent allowed by law, solely in, and obligations deposited in such Account will be, Investment Securities which mature or are subject to redemption or payment at par at the option of the holder thereof not later than such times as shall be necessary to provide moneys when needed to provide payments from such Account.

Moneys in a Series Improvement Interest Subaccount in the Improvement Account not required for immediate disbursement for the purposes for which such Account is created may, to the fullest extent practicable and reasonable, be invested and reinvested to the extent allowed by law, solely in, and obligations deposited in such Account shall be, noncallable Investment Securities which are Government Obligations, FNMAs or FHLMCs (as such terms are defined in the definition of Investment Securities) that mature or are subject to redemption at the option of the holder thereof not later than such times as shall be necessary to provide moneys when needed to provide payments from such Account.

To the extent permitted in the First Resolution, all income received from the investment or reinvestment of moneys in the Funds and Accounts established under the First Resolution will be deposited in the respective Fund or Account from which such investments are made and applied as a credit against the next succeeding deposit or credit required to be made pursuant to the First Resolution; provided however, that except as to the Subordinate Obligation Account and the Reimbursable Obligation Account, all or a portion of the income received from the investment or reinvestment of moneys in any such Fund and Account may be deposited in the Sewer Fund or the Improvement Account, including a Series Improvement Interest Subaccount therein; and *provided, further, however*, that all income received from the investment or reinvestment of moneys in any Series Improvement Interest Subaccount must be deposited in the Debt Service Account.

Neither the Director of Budget and Fiscal Services nor any Paying Agent shall be liable for any depreciation in value of any investments made by the City and County.

### **Valuation of Investment Securities**

In computing the amount in any Fund or Account, Investment Securities therein are to be valued at cost or accreted value, whichever is lower, exclusive of accrued interest. The City and County is to determine the value of Investment Securities held in any Fund or Account as frequently as it deems necessary, but not less often than annually.

### **Depositaries**

All moneys held by the City and County or any Depositary under the provisions of the First Resolution are to be held in trust and applied only in accordance with the provisions of the First Resolution, and each of the Funds and Accounts established by the First Resolution shall be a trust fund.

Each Depositary must be a bank or trust company organized under the laws of any state of the United States or a national banking association having capital stock, surplus and undivided earnings of \$5,000,000 or more and willing and able to accept such office on reasonable and customary terms and authorized by law to act in accordance with the provisions of the First Resolution.

### **Concerning Depositaries and Paying Agents**

*Qualifications and Appointment.* The Director of Budget and Fiscal Services may appoint one or more Paying Agents and Depositaries as of the date of issuance and delivery of the first Series of Bonds and may at any time or from time to time appoint one or more other Paying Agents or other Depositaries having the qualifications of a depositary, as described in the First Resolution; provided however, the Director of Budget and Fiscal Services may be designated Paying Agent and/or Depositary. Each Paying Agent, other than the Director of Budget and Fiscal Services, and each Depositary, other than the Director of Budget and Fiscal Services, shall signify its acceptance of the duties and obligations imposed upon it by the First Resolution by executing and delivering to the City and County and the Director of Budget and Fiscal Services a written acceptance thereof.

*Paying Agents and Depositaries May Buy, Hold, Sell or Deal in Bonds and Other Indebtedness of the City and County.* Each Paying Agent and each Depositary and its respective directors, officers, employees or agents, may in good faith buy, sell, own, hold and deal in any of the Bonds issued under the provisions of the First Resolution and may join any action which any Holder of a Bond may be entitled to take, with like effect as if such Paying Agent or Depositary were not a Paying Agent or any Depositary, as the case may be, under the First Resolution. Any Paying Agent or any Depositary may in good faith hold any other form of indebtedness of the City and County; own, accept or negotiate any drafts, bills of exchange, acceptances or obligations of the City and County, and make disbursements for the City and County and enter into any commercial or business arrangement therewith.

*Reimbursement of Paying Agents and Depositaries for Fees, Expenses and Charges.* Each Paying Agent and each Depositary shall be entitled to reasonable fees and to reimbursement by the City and County for all expenses and charges reasonably incurred by it in the performance of its duties. No Paying Agent nor Depositary shall have a lien for such fees and reimbursement on the moneys pledged to secure the Bonds under the First Resolution at any time held by it, prior to the lien or claim of the Holders of the Bonds on all such moneys.

### **Covenants**

The City and County has covenanted and agreed in the First Resolution with the Holders of all Bonds issued pursuant to the First Resolution as follows:

*Maintenance of the Properties of the Wastewater System; Keeping the System in Good Repair.* The Department will: (i) maintain, preserve and keep, or cause to be maintained, preserved and kept, the properties of the Wastewater System and all additions and betterments thereto and extensions thereof, and every part and parcel thereof in good repair, working order and condition, (ii) from time to time make, or cause to be made, all necessary and proper repairs, renewals, replacements, additions, extensions and betterments thereto, so that at all times the

business carried on in connection therewith shall properly and advantageously be conducted, and (iii) comply, or cause to be complied with the terms and conditions of any permit or license for the Wastewater System or any part thereof issued by any federal or state governmental agency or body and with any federal or state law or regulation applicable to the construction, operation, maintenance and repair of the Wastewater System or requiring a license, permit or approval therefor.

*Rates and Charges.* The City and County will at all times fix, charge and collect such rates and other charges as shall be required in order that in each Fiscal Year the Net Revenues will be not less than the Net Revenue Requirement for such Fiscal Year ("*Rate Covenant*"). The failure in any Fiscal Year to comply with the foregoing *Rate Covenant* does not constitute an Event of Default if the City and County complies with requirements described in the next paragraph.

Prior to the end of each Fiscal Year the Director of Environmental Services or the Director of Budget and Fiscal Services if requested by the Director of Environmental Services must complete a review of the financial condition of the Department for the purpose of estimating whether the Net Revenues for such Fiscal Year and for the next succeeding Fiscal Year will be sufficient to comply with the *Rate Covenant* and must by a written certificate make a determination with respect to such compliance. Such review may take into consideration the completion of any uncompleted Improvement and the issuance of future Series of Bonds if necessary to finance the completion of such Improvements. Such written certificate must set forth a reasonably detailed statement of the actual and estimated Revenues, Operation and Maintenance Expenses, Aggregate Debt Service, and any other estimates or assumptions upon which such determination was based, and must be filed with the City Clerk on or before July 1 in each year. If it is determined in such written certificate that the Revenues may not be so sufficient, the Director of Environmental Services or the Director of Budget and Fiscal Services if requested by the Director of Environmental Services must forthwith make a study for the purpose of determining a schedule of fees, rates and charges which, in the opinion of the Director of Environmental Services or the Director of Budget and Fiscal Services, will cause sufficient Revenues to be collected in the following Fiscal Year to comply with the *Rate Covenant* and will cause additional Revenues to be collected in such following and later Fiscal Years sufficient to eliminate the amount of any deficiency at the earliest practicable time, or the Director of Environmental Services or the Director of Budget and Fiscal Services may elect to cause the Consulting Engineer to make such a study and render such opinion. The City Council shall as promptly as practicable but no later than the 120 days following such determination by the Director of Environmental Services or the Director of Budget and Fiscal Services, or receipt of the Consulting Engineer's recommendation, adopt and place in effect a schedule of fees, rates and charges as so determined or recommended pursuant to the First Resolution.

*Sale, Lease or Other Disposition of Properties of the Wastewater System.* The properties of the Wastewater System may not be sold, mortgaged, leased or otherwise disposed of except as described below.

The properties of the Wastewater System may be sold, leased, or otherwise disposed of in their entirety if simultaneously with such sale, lease or other disposition thereof provision is made for the payment of all Bonds then Outstanding and such Bonds are no longer deemed Outstanding within the meaning of the First Resolution.

Any portion of the properties of the Wastewater System may be sold, leased, or otherwise disposed of on such terms and conditions as may be determined by the City and County if the value of such portion of the properties as of the date of such sale, lease or disposition does not exceed five percent (5%) of the net book assets of the Wastewater System as of the last day of the preceding Fiscal Year as shown in the most recent audited financial statements of the Department. Any part of the properties of the Wastewater System having a value as of the date of the sale, lease or disposition which exceeds five percent (5%) of the net book assets of the Wastewater System as of the last day of the preceding Fiscal Year as shown in the most recent audited financial statements of the Department may be sold, leased, or otherwise disposed of if the Consulting Engineer certifies to the City and County in writing that the terms and conditions of the proposed sale, lease or other disposition of any such properties are fair and reasonable, and that the estimated Revenues to be derived from the remaining properties of the Wastewater System, after taking into consideration the use by the Department of the proceeds of such proposed sale, lease or other disposition of such properties, will be sufficient to enable the City and County to comply with all covenants and conditions of the First Resolution. Proceeds of any sale, lease or other disposition of any portion of the properties of the Wastewater System pursuant to this paragraph are to be paid into the Debt Service Account and applied to the purchase or redemption of Bonds or into the Sewer Fund and applied by the City and County for the purpose of

constructing extensions, betterments or improvements to the Wastewater System as the City and County may determine.

Surplus lands, crops, timber, buildings and any other portion of the works, plant and facilities of the Wastewater System and real and personal property comprising a part thereof, which, in the opinion of the Director of Environmental Services, have become unserviceable, inadequate, obsolete, worn out, or unfit to be used in the operation of the Wastewater System, or no longer necessary, material to, or useful in such operation may be sold, leased, or otherwise disposed of. Proceeds of any such sale, lease or other disposition of any portion of the properties of the Wastewater System pursuant to this paragraph are to be paid into the Sewer Fund.

If permitted by the laws of the State, the City and County may transfer without consideration the properties comprising the Wastewater System to a public corporation or political subdivision of the State, provided such corporation or subdivision assumes all of the City and County's or the Department's obligations and duties under the First Resolution.

In the event that any part of the properties of the Wastewater System is transferred from the City and County through the operation of law (including condemnation), any moneys received by the City and County as a result of such transfer are to be paid: (i) if such proceeds are not in excess of \$250,000, into the Sewer Fund; or (ii) if such proceeds are in excess of \$250,000: (a) into the Debt Service Account and applied to the purchase or redemption of Bonds; or (b) into the Renewal and Replacement Account and applied by the City and County for the purpose of constructing replacements, extensions, betterments or improvements to the Wastewater System, as the City and County shall determine.

*Insurance.* Except as provided for in the next paragraph, the Department must keep, or cause to be kept, the works, plants and facilities comprising the properties of the Wastewater System and the operations thereof insured to the extent available at reasonable cost with responsible insurers, with policies payable to the City and County or the Department, against risks of direct physical loss, damage to or destruction of the above-ground structures, and the equipment and contents therein, of the Wastewater System arising from accidents, casualties or negligence, and other causes customarily insured against, at least to the extent that similar insurance is usually carried by utilities operating like properties, including liability insurance and workman's compensation insurance; provided, however, that any time while any contractor engaged in constructing any part of the Wastewater System is fully responsible for such insurance, the Department is not required to keep such part of the Wastewater System insured. All policies of insurance shall be for the benefit of the Holders of the Bonds and the City and County or the Department as their respective interests may appear.

In the event of any loss or damage to the properties of the Wastewater System covered by insurance, the Department will: (i) with respect to each such loss, promptly repair and reconstruct to the extent necessary to the proper conduct of the operations of the Wastewater System the lost or damaged portion thereof and shall apply the proceeds of any insurance policy or policies covering such loss or damage for that purpose to the extent required therefor, unless, in case of loss or damage involving \$250,000 or more, the Department determines that such repair and reconstruction will not be undertaken; and (ii) if the Department does not use the entire proceeds of such insurance to repair or reconstruct such lost or damaged property, the proceeds of such insurance policy or policies or any portion thereof not used for such repair or reconstruction, as the case may be, are to be paid into the Sewer Fund. If the Department does not obtain insurance from responsible insurers as provided for in the First Resolution, the City and County or the Department must self-insure; provided, however, that if the Department fails to carry insurance against any of the risks normally insured against by operators of facilities similar to the Wastewater System, it must secure the concurrence of an independent insurance consultant. In making its decision whether to concur in such self-insurance, the independent insurance consultant must (i) make an estimate of the added financial risks, if any, assumed by the Department as a result of the self-insurance; (ii) consider the availability of commercial insurance, the terms upon which such insurance is available and the costs of such available insurance, and the effect of such terms and costs upon the Department's costs and charges for its services; and (iii) determine whether the added financial risk, if any, being assumed by the Department is prudent in light of the savings to be realized from such self-insurance or in light of the general availability of insurance.

The Department may include insurance required by the First Resolution as part of a blanket insurance policy of the City and County.

*Consulting Engineer.* The City Council, the Director of Environmental Services or the Director of Budget and Fiscal Services may from time to time retain and appoint, as Consulting Engineer, an independent consulting engineer or engineering firm or corporation having special skill, knowledge and experience in analyzing the operations of wastewater systems, preparing rate analyses, forecasting the loads and revenues of wastewater systems, preparing feasibility reports respecting the financing of wastewater systems and advising on the operation of wastewater facilities, who shall be available to advise the Department, upon request, and to make such investigations and determinations as may be necessary from time to time under the provisions of the First Resolution.

*Books of Account; Annual Audit.* The Department will maintain and keep proper books of account relating to the Wastewater System and in accordance with generally accepted accounting principles. Within 180 days after the end of each Fiscal Year commencing with the Fiscal Year ending June 30, 2000, the Department will cause such books of account to be audited by an independent certified public accountant. The audit required by the First Resolution may be part of a comprehensive audit of the City and County, *provided* that the Wastewater System in such audit is treated as an "enterprise fund" and the revenues and expenses of the Wastewater System are stated in a manner which permits identification by category of the sources and uses of the Revenues. A copy of each audit report prepared in conformity with generally accepted accounting principles must be filed promptly with the City and County and sent to any Bondholder filing with the Director of Environmental Services a written request for a copy thereof. and to any Rating Agency which has rated any Bonds.

*To Pay Bonds Punctually.* The City and County will duly and punctually pay, or cause to be paid, but only from the Revenues, income and other funds specified in the First Resolution, the principal and Redemption Price (if any) of, and interest on, each and every Bond on the dates and at the places, and in the manner provided in the Bonds according to the true intent and meaning thereof, and the City and County will faithfully do and perform and at all times fully observe and keep any and all of its covenants, undertakings, stipulations and provisions contained in the Bonds and in the First Resolution.

*Payment of Taxes and Other Claims.* The Department must from time to time duly pay and discharge, or cause to be paid and discharged, all taxes, assessments and other governmental charges, or payments in lieu thereof, lawfully imposed upon the properties of the Wastewater System (or any part thereof) or upon the Net Revenues or income received therefrom when the same become due, as well as all lawful claims for labor, material and supplies, which, if not paid, might become a lien or charge upon said properties or any part thereof, or upon the Revenues derived from the ownership or operation of the Wastewater System, or which might in any way impair the security of the Bonds, except any such assessments, charges or claims which the Department in good faith contests as to validity.

*Extension of Payment of Bonds.* The City and County will not, directly or indirectly, extend or assent to the extension of the maturity of any of the Bonds or the time of payment of any claims for interest by the purchase of such Bonds, coupons, if any, or claims for interest or by any other arrangement and in case the maturity of any of the Bonds or the time for payment of any such claims for interest is extended, such Bonds or claims for interest will not be entitled, in case of any default under the First Resolution, to the benefit of the First Resolution or to any payment out of any assets of the City and County or the funds (except funds held in trust for the payment of particular Bonds or claims for interest pursuant to the First Resolution) held by the Paying Agents, except subject to the prior payment of the principal of all Bonds issued and Outstanding the maturity of which has not been extended and of such portion of the accrued interest on the Bonds as shall not be represented by such extended claims for interest.

*Sound Improvements and Extensions.* The Department will not expend any of the income, revenues, receipts, profits and other moneys derived by it from the ownership or operation of the Wastewater System for any renewals, replacements, additions, betterments and improvements to, or extensions of, the Wastewater System which, in the sole opinion of the Director of Environmental Services, will not properly and advantageously contribute to the conduct of the business of the Wastewater System in an efficient and economical manner unless required to do so to permit the continued operation of the Wastewater System or to preserve or protect the Wastewater System.

*Annual Budget.* Not later than May 31 before the beginning of any Fiscal Year the City and County or the Department will prepare a preliminary budget of Operation and Maintenance Expenses of the Wastewater System

and reserves therefor for the ensuing Fiscal Year. Each such budget and each Annual Budget will include, in addition to provisions for all anticipated Operation and Maintenance Expenses, provision for the payments required to be made to the Renewal and Replacement Account, provided that such payments shall in the aggregate at least equal the amount described below. Such preliminary budget and any Annual Budget may set forth such additional material as the City and County or the Department may determine.

Except as described below, on or before the 15th day of each such Fiscal Year, the City and County must finally adopt the Annual Budget for such year. The City and County may at any time adopt an amended Annual Budget for the remainder of the then current Fiscal Year. Copies of the Annual Budget and of any amended Annual Budget are to be made available for inspection by the Bondholders and are to be sent to each Rating Agency.

If for any reason the City and County does not adopt the Annual Budget before the 15th day of any Fiscal Year, the budget for the preceding Fiscal Year is deemed to be in effect for such Fiscal Year until the Annual Budget for such Fiscal Year is adopted. For any purpose of computation under the provisions of the First Resolution, the budget for the preceding year is deemed to have been adopted for any Fiscal Year until the Annual Budget for such year is adopted.

Every preliminary budget, Annual Budget and amended Annual Budget must: (i) set forth in reasonable detail amounts required for repair, replacement or reconstruction of the Wastewater System and major or extraordinary repairs, renewals or replacements of the Wastewater System, if any, for the period to be covered by such budget; (ii) specify the amounts to be deposited in the Renewal and Replacement Account, the Subordinate Obligation Account, the Reimbursable Obligation Account and the Wastewater General Account, and the amounts to be maintained in the Sewer Fund for working capital and operating reserves and in the Rate Stabilization Account for rate stabilization purposes, if any, for such purposes for such period, (iii) specify the amounts to be transferred from the Wastewater General Account to the Rate Stabilization Account and to other Funds and Accounts; and (iv) project the amounts required for such purposes for the next five Fiscal Years in such format as the Director of Environmental Services may determine. A copy of each such report is to be filed and maintained in the records of the City and County.

#### **Events of Default**

Each of the following events constitutes an Event of Default under the First Resolution:

- (a) if payment of the principal and Redemption Price, if any, of any Bond, is not punctually made when due and payable, whether at the stated maturity thereof or upon proceedings for the redemption thereof (whether by voluntary redemption or a mandatory sinking fund redemption or otherwise);
- (b) if payment of the interest on any Bond is not punctually made when due;
- (c) if the provisions of any Series Resolution with respect to mandatory Sinking Fund Installment payments or the redemption of Term Bonds therefrom, as the case may be, are not punctually complied with at the time and in the manner specified in such Series Resolution;
- (d) if the City and County or the Department fails to duly and punctually perform or observe any other of the covenants, agreements or conditions contained in the First Resolution or in the Bonds, on the part of the City and County or the Department to be performed, and such failure continues for 90 days after written notice thereof from the Holders of not less than 20% of the Bonds then Outstanding; provided that, if such failure is such that it cannot be corrected within such 90-day period, it will not constitute an Event of Default if corrective action is instituted within such period and diligently pursued until the failure is corrected; and
- (e) if the City and County: (i) admits in writing its inability to pay its debts generally as they become due; or (ii) files a petition in bankruptcy or seeking a composition of indebtedness under the provisions of any Federal or state bankruptcy or similar law; or (iii) makes an assignment for



the benefit of its creditors; or (iv) files a petition or any answer seeking relief under the provisions of any Federal or state bankruptcy or similar law; or (v) consents to the appointment of a receiver of the whole or any substantial part of the Wastewater System; or (vi) consents to the assumption by any court of competent jurisdiction under the provisions of any other law for the relief or aid of debtors of custody or control of the City and County or the Department, or of the whole or any substantial part of the Wastewater System.

#### **Notice to Bondholders of Event of Default**

Immediately after the occurrence of an Event of Default or within 30 days after any Paying Agent knows of any other Event of Default, the Paying Agent or Paying Agents shall give notice of all such Events of Default to the Bondholders, all other Paying Agents and Support Facility Providers, and each Rating Agency, in the manner as provided for in the First Resolution, unless such Events of Default shall have been cured before the giving of such notice.

#### **Acceleration of Bonds**

If an Event of Default shall happen and shall not have been remedied, then and in every such case the Holders of not less than 25% in principal amount of the Bonds then Outstanding, by notice in writing to the City and County and the Director of Budget and Fiscal Services, may declare the principal of all the Bonds then Outstanding, and the interest accrued thereon, to be due and payable immediately, and upon any such declaration the same shall become and be immediately due and payable. The right of the Holders of not less than 25% in principal amount of the Bonds then Outstanding to make any such declaration, however, shall be subject to the condition that if, at any time after such declaration, but before the Bonds shall have matured by their terms, all overdue installments of interest upon the Bonds, together with interest on such overdue installments of interest to the extent permitted by law and all other sums then payable by the City and County under the First Resolution (except the principal of, and interest accrued since the next preceding interest date on, the Bonds due and payable solely by virtue of such declaration) shall either be paid by or for the account of the City and County or provision satisfactory to the Holders of a majority in principal amount of the Bonds then Outstanding shall be made for such payment, and all defaults under the Bonds or under the First Resolution (other than the payment of principal and interest due and payable solely by reason of such declaration) shall be cured or be secured to the satisfaction of the Holders of a majority in principal amount of the Bonds then Outstanding or provision deemed by such Holders of the Bonds to be adequate shall be made therefor, then and in every such case the Holders of at least a majority in principal amount of the Bonds then Outstanding, by written notice to the City and County, may rescind such declaration and annul such default in its entirety, but no such rescission shall extend to or affect any subsequent default or impair or exhaust any resulting right or power.

The bond insurers for all Outstanding Bonds and for the Series 2001 Bonds have certain consent rights in connection with any default which may constrain the rights of the Holders described above.

#### **Inspection of Books and Records; the City and County to Account as Trustee for Express Trust**

The City and County covenants that if an Event of Default shall have happened and shall not have been remedied, the books of record and account of the Department relating to the Wastewater System and all other records relating thereto shall at all times be subject to the inspection and use of the Holders of at least 25% in principal amount of the Bonds then Outstanding and of their respective agents and attorneys or of any committee therefor.

The City and County covenants that if an Event of Default shall have happened and shall not have been remedied, the City and County will continue to account, as a trustee of an express trust, for all Revenues and other moneys, securities and funds pledged under the First Resolution.

### Application of Revenues in an Event of Default

During the continuance of an Event of Default as described in items (a) through (c) of the Events of Default described above or of any other Event of Default resulting in an Event of Default described in items (a) through (c) of the Events of Default described above, the Revenues received by a receiver appointed pursuant to the First Resolution as the result of the taking of possession of the business and properties of the Wastewater System, are to be applied by the receiver: first, to the payment of all necessary and proper Operation and Maintenance Expenses of the Wastewater System and all other proper disbursements or liabilities made or incurred by the receiver; second, to the then due and overdue payments into the Debt Service Account, including the making up of deficiencies therein; and last, for any lawful purpose in connection with the Wastewater System.

In the event that at any time the funds held by the receiver are insufficient for the payment of the principal and Redemption Price (if any) of, and interest then due on, the Bonds, such funds (other than funds held for the payment or redemption of particular Bonds or coupons) and all Revenues of the Department and other of its moneys received or collected for the benefit or for the account of Holders of the Bonds by the receiver are to be applied as follows:

- (1) Unless the principal of all of the Bonds shall have become due and payable,

First, to the payment of all necessary and proper Operation and Maintenance Expenses of the Wastewater System and all other proper disbursements or liabilities made or incurred by the receiver;

Second, to the payment to the persons entitled thereto of all installments of interest then due (including any interest on overdue principal) in the order of the maturity of such installments, earliest maturities first, and if the amounts available shall not be sufficient to pay in full any installment or installments of interest maturing on the same date, then to the payment thereof ratably, according to the amount due thereon, to the persons entitled thereto, without any discrimination or preference; and

Third, to the payment to the persons entitled thereto of the principal and premium, if any, due and unpaid upon the Bonds at the time of such payment without preference or priority of any Bond over any other Bonds, ratably, according to the amounts due respectively for principal and redemption premium, without any discrimination or preference.

- (2) If the principal of all of the Bonds shall have become due and payable,

First, to the payment of all necessary and proper Operation and Maintenance Expenses of the Wastewater System and all other proper disbursements or liabilities made or incurred by the receiver;

Second, to the payment of the principal and interest then due and unpaid upon the Bonds without preference or priority of principal over interest or of interest over principal, or of any installment of interest over any other installment of interest, or of any Bond over any other Bonds, ratably, according to the amounts due respectively for principal and interest, to the persons entitled thereto without any discrimination or preference.

Whenever moneys are to be applied as described in the foregoing paragraphs, such moneys shall be applied by the receiver at such times, and from time to time, as it in its sole discretion shall determine, having due regard to the amount of such moneys available for application and the likelihood of additional moneys becoming available for such application in the future.

If and whenever all overdue installments of interest on all Bonds, together with the reasonable and proper charges, expenses, and liabilities of the Holders of the Bonds, their respective agents and attorneys, and all other sums payable by the City and County under the First Resolution including the principal and Redemption Price (if

any) of all Bonds which shall then be payable, shall either be paid in full by or for the account of the City and County or provision satisfactory to the receiver shall be made for such payment, and all defaults under the First Resolution or the Bonds shall be made good and secured to the satisfaction of the receiver or provision deemed by the receiver to be adequate therefor, the receiver shall pay over to the Department all of its moneys, securities, funds and Revenues then remaining unexpended in the hands of the Bondholders' Committee (except moneys, securities, funds or Revenues deposited or pledged, or required by the terms of the First Resolution to be deposited or pledged, with the Director of Budget and Fiscal Services), control of the business and possession of the property of the Department shall be restored to the Department, and thereupon the City and County shall be restored to its former positions and rights under the First Resolution, and all Revenues shall thereafter be applied as provided for in the First Resolution. No such payment over to the Department by the receiver or resumption of this application of Revenues as provided in the First Resolution, shall extend to or affect any subsequent default under the First Resolution or impair any right consequent thereon.

### **Suits at Law or Equity and Mandamus and Appointment of a Receiver**

If an Event of Default shall happen and shall not have been remedied, then and in every such case, but subject to the provisions, limitations and conditions as set forth in the First Resolution, the Holder of any Bond at the time Outstanding shall be entitled, for the equal benefit and protection of all Holders of the Bonds similarly situated to proceed, protect and enforce the rights vested in such Holder by the First Resolution by such appropriate judicial proceeding as such Holder shall deem most effectual to protect and enforce any such right, either by suit in equity or by action of law, whether for the specific performance of any covenant or agreement contained in the First Resolution, or in aid of the exercise of any power granted in the First Resolution, or to enforce any other legal or equitable right vested in the Holders of Bonds by the First Resolution or by law; provided, however, that no judicial proceeding shall be brought seeking the appointment of a receiver to take possession of the Wastewater System or to manage, receive and apply the Revenues unless the Holders of not less than a majority in principal amount of the Bonds then Outstanding or a Bondholders' Committee representing the Holders of not less than a majority in principal amount of the Bonds then Outstanding shall have joined in or consented to such proceeding.

### **Bondholders' Committee**

If an Event of Default shall happen and shall not have been remedied, the Holders of not less than 25% in principal amount of the Bonds then Outstanding may call a meeting of the Holders of Bonds for the purpose of electing a Bondholders' Committee. Such meeting shall be called and proceedings thereat shall be conducted as provided for other meetings of Bondholders pursuant to the First Resolution. At such meeting the Holders of not less than a majority of the principal amount of the Bonds then Outstanding must be present in person or by proxy in order to constitute a quorum for the transaction of business, less than a quorum, however, having power to adjourn from time to time without any notice other than that required by the First Resolution. A quorum being present at such meeting, the Bondholders present in person or by proxy may, by the votes cast by the Holders of a majority in principal amount of the Bonds so present in person or by proxy, elect one or more persons who may or may not be Bondholders to the Bondholders' Committee which shall act as trustee for all Bondholders. The Bondholders present in person or by proxy at said meeting, or at any adjourned meeting thereof, shall prescribe the manner in which the successors of the persons elected to the Bondholders' Committee at such Bondholders' meeting shall be elected or appointed, and may prescribe rules and regulations governing the exercise by the Bondholders' Committee of the power conferred upon it, and may provide for the termination of the existence of the Bondholders' Committee.

### **Bondholders May Direct Proceedings**

The Holders of not less than a majority in principal amount of the Bonds at the time outstanding are authorized and empowered: (1) to direct the time, method, and place of conducting any proceeding for any remedy available to the holders of the Bonds; or (2) on behalf of the holders of the Bonds then outstanding, to consent to the waiver of any Event of Default or its consequences. No waiver or rescission shall extend to any subsequent or other default, or impair any right consequent thereon.

The bond insurers for all Outstanding Bonds and for the Series 2001 Bonds have certain consent rights in connection with any default which may constrain the rights of the Holders described above.

### **Abandonment of Proceedings; Adverse Determination**

No delay or omission of any Holder of Bonds to exercise any right or power arising upon the occurrence of a default under the First Resolution, including an Event of Default, shall impair any right or power or shall be construed to be a waiver of any such default or to be an acquiescence therein. Every power and remedy given by the First Resolution to the Holders of Bonds may be exercised from time to time and as often as may be deemed expedient by such Holders.

In case the Holders of the Bonds or a Bondholders' Committee formed pursuant to the First Resolution shall have proceeded to enforce any right under the First Resolution and such proceedings shall have been discontinued or abandoned for any reason, or shall have been determined adversely to the Holders of the Bonds or such Bondholders' Committee, then and in every such case the City and County, and the Holders of the Bonds shall be restored to their former positions and rights under the First Resolution, and all rights, remedies and powers of the Holders of the Bonds shall continue as if no such proceedings had been taken.

### **Amending and Supplementing of Resolution**

*Amending and Supplementing of Resolution Without Consent of Holders of Bonds.* The City and County, from time to time and at any time and without the consent or concurrence of any Holder of any Bond, may adopt (i) a Series Resolution for the purpose of providing for the issuance of Bonds pursuant to the provisions as set forth in the First Resolution; (ii) to make any changes, modifications, amendments or deletions to the First Resolution which may be required to permit the First Resolution to be qualified under the Trust Indenture Act of 1939 of the United States of America; or (iii) if the rights of the Holders of the Bonds then Outstanding shall not be materially adversely affected thereby, a Supplemental Resolution (herein defined and referred to as a "Supplemental Resolution") for any one or more of the following purposes:

1. to make any changes or corrections in the First Resolution as to which the City and County shall have been advised by counsel that the same are verbal corrections or changes or are required for the purpose of curing or correcting any ambiguity or defective or inconsistent provision or omission or mistake or manifest error contained in the First Resolution, or to insert in the First Resolution such provisions clarifying matters or questions arising under the First Resolution as are necessary or desirable;
2. to add additional covenants and agreements of the City and County for the purpose of further securing the payment of the Bonds;
3. to surrender any right, power or privilege reserved to or conferred upon the City and County by the terms of the First Resolution;
4. to confirm as further assurance any lien, pledge or charge, or the subjection to any lien, pledge, or charge, created or to be created by the provisions of the First Resolution;
5. to grant to or to confer upon the Holders of the Bonds any additional rights, remedies, powers, authority or security that lawfully may be granted to or conferred upon them, and
6. to modify in any other respect any of the provisions of the First Resolution.

Except for Series Resolutions authorizing the issuance of Bonds pursuant to the First Resolution, the City and County shall not adopt any Supplemental Resolution authorized by the foregoing provisions of the First Resolution unless in the Opinion of Counsel the adoption of such Supplemental Resolution is permitted by the First Resolution and the provisions of such Supplemental Resolution do not materially adversely affect the rights of the Holders of the Bonds then Outstanding.

*Amendment of Resolution With Consent of Holders of the Bonds.* With the consent of the Holders of not less than a majority of the Bonds then Outstanding, the City and County from time to time and at any time may adopt a resolution amendatory of or supplemental to the First Resolution for the purpose of adding any provisions to,

or changing in any manner or eliminating any of the provisions of, the First Resolution, or modifying or amending the rights and obligations of the City and County thereunder, or modifying or amending in any manner the rights of the Holders of the Bonds then Outstanding; provided, however, that without the specific consent of the Holder of each such Bond which would be affected thereby, no Supplemental Resolution amending or supplementing the provisions of the First Resolution shall: (1) change the fixed maturity date for the payment of the principal of any Bond or the dates for the payment of interest thereon or the terms of the redemption thereof, or reduce the principal amount of any Bond or the rate of interest thereon or the Redemption Price (or the redemption premium) payable upon the redemption or prepayment thereof; or (2) reduce the aforesaid percentage of Bonds, the Holders of which are required to consent to any Supplemental Resolution amending or supplementing the provisions of the First Resolution; or (3) give to any Bond or Bonds any preference over any other Bond or Bonds secured by the First Resolution; or (4) authorize the creation of any pledge of the Revenues and other moneys pledged under the First Resolution, prior, superior or equal to the pledge of and lien and charge thereon created in the First Resolution for the payment of the Bonds except to the extent provided in the First Resolution; or (5) deprive any Holder of the Bonds in any material respect of the security afforded by the First Resolution; provided further, however, that without the specific consents of the Holders of not less than a majority in principal amount of the Term Bonds then Outstanding and affected thereby, no Supplemental Resolution amending or supplementing the provisions of the First Resolution shall (a) change the amount of any Sinking Fund Installments for the retirement of Term Bonds or the due dates of such installments or the terms for the purchase or redemption thereof from such installments, or (b) reduce the aforesaid percentage of Term Bonds, the Holders of which are required to consent to any such Supplemental Resolution. (Nothing in this paragraph contained, however, shall be construed as making necessary the approval of the Holders of the Bonds of the adoption of any Supplemental Resolution). A modification or amendment with respect to the Sewer Fund or the Debt Service Account or Common Reserve Account or any Separate Series Reserve Account therein shall not be deemed a change in the terms of payments; provided that no such modification or amendment shall, except upon the consent of the Holders of all Bonds then outstanding affected thereby, reduce the amount or amounts required to be credited to the Debt Service Account or Common Reserve Account or any Separate Series Reserve Account.

The bond insurers for all Outstanding Bonds and for the Series 2001 Bonds have certain consent rights in connection with any amendment which may constrain the rights of the Holders described above.

The proof of the giving of any consent required and of the holding of Bonds for the purpose of giving consents shall be made in accordance with the First Resolution. It shall not be necessary that the consents of the Holders of the Bonds approve the particular form of wording of the proposed amendment or supplement or of the Supplemental Resolution affecting such amendment or supplement, but it shall be sufficient if such consents approve the substance of the proposed amendment or supplement. After the Holders of the required percentage of Bonds shall have filed their consents to the amending or supplementing of the First Resolution pursuant to the First Resolution, the City and County shall publish at least once a notice of such amending or supplementing of the First Resolution, in *The Bond Buyer*, published in New York, New York, or in lieu of publication in *The Bond Buyer*, in some other newspaper specializing in financial matters as provided for in the First Resolution and shall mail a copy of such notice, postage prepaid to each registered Holder of Bonds then Outstanding, at his address, if any, appearing upon the registry books, but failure to mail copies of said notice to any of said Holders shall not affect the validity of the Supplemental Resolution effecting such amendments or supplements or the consent thereto. A record, consisting of the papers required by the First Resolution, shall be proof of the matters therein stated until the contrary is proved. No action or proceeding to set aside or invalidate such Supplemental Resolution or any of the proceedings for its adoption shall be instituted or maintained unless such action or proceeding is commenced within 60 days after the publication and mailing of the notice required by the First Resolution.

The City and County shall furnish a notice of each amendment or supplement and a copy of the Supplemental Resolution effecting such amendment or supplement to each rating agency which has rated the Bonds at least 15 days prior to the effective day of the Supplemental Resolution.

#### **Discharge of Liens and Pledges; Bonds No Longer Outstanding and Deemed to be Paid**

Except as otherwise provided in the First Resolution with regard to Option Bonds, the obligations of the City and County under the First Resolution and the liens, pledges, charges, trusts, covenants and agreements of the

City and County made or provided for in the First Resolution, shall be fully discharged and satisfied as to any Bond and such Bond shall no longer be deemed to be Outstanding under the First Resolution:

(i) when such Bond shall have been canceled, or shall have been surrendered for cancellation or is subject to cancellation, or shall have been purchased by or behalf of the City and County from moneys held under the First Resolution; or

(ii) as to any Bond not canceled or surrendered for cancellation or subject to cancellation or so purchased, when payment of the principal and redemption price (if any) of such Bond, plus interest on such principal to the due date thereof (whether such due date be by reason of maturity or upon redemption or prepayment, or otherwise) either (a) shall have been made or caused to be made in accordance with the terms thereof, or (b) shall have been provided for by irrevocably depositing with the Paying Agent for such Bond, in trust, and irrevocably appropriating and setting aside exclusively for such payment, either (1) moneys sufficient to make such payment or (2) noncallable Refunded Municipal Obligations or noncallable Investment Securities described in item (i) of the definition of Investment Securities as set forth in the First Resolution, maturing as to principal and interest in such amount and at such times as will insure, together with any cash deposit, the availability of sufficient moneys to make such payment, whichever the City and County deems to be in its best interest and as verified by an independent nationally recognized firm of certified public accountants in a report delivered to the City and County and the Director of Budget and Fiscal Services, and all necessary and proper fees, compensation and expenses of the Director of Budget and Fiscal Services and the Paying Agents pertaining to the Bond with respect to which such deposit is made shall have been paid or the payment thereof provided for to the satisfaction of the Director of Budget and Fiscal Services and said Paying Agents.

At such time as a Bond shall be deemed to be no longer Outstanding under the First Resolution, as aforesaid, such Bond, except for the purposes of any payment from such moneys, Refunded Municipal Obligations or Investment Securities, shall no longer be secured by or entitled to the benefits of the First Resolution.

Notwithstanding the foregoing, in the case of a Bond which is to be redeemed or otherwise prepaid prior to its stated maturity, no deposit under clause (b) of subparagraph (ii) of the second preceding paragraph above shall constitute such payment, discharge and satisfaction as aforesaid until such Bond shall have been irrevocably designated for redemption or prepayment and proper notice of such redemption or prepayment shall have been previously given in accordance with the First Resolution or provision shall have been irrevocably made for the giving of such notice.

Any such moneys so deposited with the Paying Agents for the Bonds as provided in the First Resolution may at the direction of the City and County also be invested and reinvested in Investment Securities, maturing in the amounts and times as set forth in the First Resolution. All income from all Refunded Municipal Obligations and Investment Securities in the hands of the Paying Agents which is not required for the payment of the Bonds and interest and premium thereon with respect to which such moneys shall have been so deposited, shall be paid to the City and County for deposit in the Sewer Fund free and clear of any trust, lien, security interest, pledge or assignment securing any Bonds or otherwise existing under the First Resolution.

All moneys, Refunded Municipal Obligations or Investment Securities set aside and held in trust pursuant to the provisions of the First Resolution for the payment of Bonds (including interest and premium thereof, if any) shall be applied to and used solely for the payment of the particular Bond (including interest and premium thereof, if any) with respect to which such moneys and Investment Securities have been so set aside in trust.

If moneys, Refunded Municipal Obligations or Investment Securities have been deposited or set aside with a Paying Agent pursuant to the First Resolution for the payment of a specific Bond and such Bond is deemed to have been paid and to be no longer Outstanding under the First Resolution as provided in the defeasance provisions of the First Resolution, but such Bond has not in fact been actually paid in full, no amendment to the defeasance provisions of the First Resolution may be made without the consent of the Holder of each Bond affected thereby.

The City and County may at any time surrender to a Paying Agent for a Series of Bonds for cancellation by any Bonds of such Series previously executed and delivered, which the City and County may have acquired in any

manner whatever, and such Bonds upon such surrender for cancellation shall be deemed to be paid and no longer Outstanding under the First Resolution.

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## Appendix D

### Proposed Form of Continuing Disclosure Certificate [Excluding signatures and exhibit to Master Certificate]

#### MASTER CERTIFICATE OF THE DIRECTOR OF BUDGET AND FISCAL SERVICES OF THE CITY AND COUNTY OF HONOLULU, HAWAII, PROVIDING FOR CONTINUING DISCLOSURE

I, the undersigned, Roy K. Amemiya, Jr., being the duly appointed Director of Budget and Fiscal Services (the "Director") of the City and County of Honolulu, Hawaii (the "City and County"), DO HEREBY CERTIFY as follows:

#### ARTICLE I PURPOSE AND DEFINITIONS

Section 1.1. *Purpose.* This Certificate shall constitute a written undertaking for the benefit of the Holders of the Bonds, and is being executed and delivered solely to assist the Underwriters in complying with subsection (b)(5) of the Rule.

Section 1.2. *Definitions.* The following terms used in this Certificate shall have the following respective meanings:

"*Annual Financial Information*" means, collectively, (i) the financial information and operating data with respect to the Department for each fiscal year of the Department of the type included in the Series 1998 Official Statement of the City and County under the headings "FINANCIAL STATEMENTS," and "PENDING LITIGATION;" and (ii) the information regarding amendments to this Certificate required pursuant to Sections 3.2(c) and (d) of this Certificate. Audited Financial Statements, if available, or Unaudited Financial Statements shall be included in the Annual Financial Information as described in Section 2.1(c) of this Certificate.

The descriptions contained in clause (i) above of financial information and operating data constituting Annual Financial Information are of general categories of financial information and operating data. When such descriptions include information that no longer can be generated because the operations to which it related have been materially changed or discontinued, a statement to that effect shall be provided in lieu of such information.

"*Audited Financial Statements*" means the annual financial statements, if any, of the Department, audited by such auditor as shall then be required or permitted by State law or the Charter of the City and County. Audited Financial Statements shall be prepared in accordance with GAAP; *provided, however*, that the Department may from time to time, if required by federal or State legal requirements, modify the accounting principles to be followed in preparing its financial statements. The notice of any such modification required by Section 3.2(d) of this Certificate shall include a reference to the specific federal or State law or regulation describing such accounting principles. Prior to the fiscal year ending June 30, 1999, Audited Financial Statements of the Department means the extracts of the audited financial statements of the City and County relating to the Sewer Fund and the Wastewater System Facility Charge Fund.

"*Beneficial Owner*" means any person who (i) has the power, directly or indirectly, to vote or consent with respect to, or dispose of ownership of, any Bonds (including a person who holds Bonds through a nominee, depository or other intermediary), or (ii) is treated as the owner of any Bonds for federal income tax purposes.

"*Bonds*" means any revenue bonds issued by the City and County under and pursuant to Resolution No. 98-193 duly adopted by the City Council of the City and County on November 10, 1998 and identified in a Series Certificate.

## Appendix D

### Proposed Form of Continuing Disclosure Certificate [Excluding signatures and exhibit to Master Certificate]

#### MASTER CERTIFICATE OF THE DIRECTOR OF BUDGET AND FISCAL SERVICES OF THE CITY AND COUNTY OF HONOLULU, HAWAII, PROVIDING FOR CONTINUING DISCLOSURE

I, the undersigned, Roy K. Amemiya, Jr., being the duly appointed Director of Budget and Fiscal Services (the "Director") of the City and County of Honolulu, Hawaii (the "City and County"), DO HEREBY CERTIFY as follows:

#### ARTICLE I PURPOSE AND DEFINITIONS

Section 1.1. *Purpose.* This Certificate shall constitute a written undertaking for the benefit of the Holders of the Bonds, and is being executed and delivered solely to assist the Underwriters in complying with subsection (b)(5) of the Rule.

Section 1.2. *Definitions.* The following terms used in this Certificate shall have the following respective meanings:

"*Annual Financial Information*" means, collectively, (i) the financial information and operating data with respect to the Department for each fiscal year of the Department of the type included in the Series 1998 Official Statement of the City and County under the headings "FINANCIAL STATEMENTS," and "PENDING LITIGATION;" and (ii) the information regarding amendments to this Certificate required pursuant to Sections 3.2(c) and (d) of this Certificate. Audited Financial Statements, if available, or Unaudited Financial Statements shall be included in the Annual Financial Information as described in Section 2.1(c) of this Certificate.

The descriptions contained in clause (i) above of financial information and operating data constituting Annual Financial Information are of general categories of financial information and operating data. When such descriptions include information that no longer can be generated because the operations to which it related have been materially changed or discontinued, a statement to that effect shall be provided in lieu of such information.

"*Audited Financial Statements*" means the annual financial statements, if any, of the Department, audited by such auditor as shall then be required or permitted by State law or the Charter of the City and County. Audited Financial Statements shall be prepared in accordance with GAAP; *provided, however*, that the Department may from time to time, if required by federal or State legal requirements, modify the accounting principles to be followed in preparing its financial statements. The notice of any such modification required by Section 3.2(d) of this Certificate shall include a reference to the specific federal or State law or regulation describing such accounting principles. Prior to the fiscal year ending June 30, 1999, Audited Financial Statements of the Department means the extracts of the audited financial statements of the City and County relating to the Sewer Fund and the Wastewater System Facility Charge Fund.

"*Beneficial Owner*" means any person who (i) has the power, directly or indirectly, to vote or consent with respect to, or dispose of ownership of, any Bonds (including a person who holds Bonds through a nominee, depository or other intermediary), or (ii) is treated as the owner of any Bonds for federal income tax purposes.

"*Bonds*" means any revenue bonds issued by the City and County under and pursuant to Resolution No. 98-193 duly adopted by the City Council of the City and County on November 10, 1998 and identified in a Series Certificate.

“*Series 1998 Official Statement*” means the Official Statement of the City and County relating to its Wastewater System Revenue Bonds (First Bond Resolution), Senior Series 1998.

“*SID*” means, at any time, a then-existing state information depository, if any, as operated or designated as such by or on behalf of the State for the purposes referred to in the Rule. As of the date of this Certificate, there is no SID.

“*State*” means the State of Hawaii.

“*Supplemental Certificate*” means any certificate executed by the Director as described in Section 3.2 of this Certificate amending the provisions of this Certificate.

“*Unaudited Financial Statements*” means the same as Audited Financial Statements, except that they shall not have been audited.

“*Underwriter*” means any original underwriter of a Series of Bonds who is required to comply with the Rule and who is identified in a Series Certificate.

## ARTICLE II THE UNDERTAKING

Section 2.1. *Annual Financial Information.* (a) The City and County shall provide Annual Financial Information with respect to each fiscal year of the Department, commencing with the fiscal year ending June 30, 1998, by no later than eight months after the end of the respective fiscal year, to each NRMSIR and the SID. The City and County may provide Annual Financial Information by specific reference to documents (i) either (1) provided to each NRMSIR existing at the time of such reference and the SID or (2) filed with the SEC, or (ii) if such document is an Official Statement, available from the MSRB. The Department may provide Annual Financial Information in one document or multiple documents comprising a package, and at one time or in part from time to time.

(b) The City and County shall provide, in a timely manner, notice of any failure of the City and County to provide the Annual Financial Information by the date specified in subsection (a) above to (i) either the MSRB or each NRMSIR, and (ii) the SID.

(c) If Audited Financial Statements are not provided as part of Annual Financial Information by the date required by Section 2.1(a) of this Certificate, the City and County shall provide (i) as part of the Annual Financial Information, Unaudited Financial Statements in a format similar to the unaudited financial statements contained in the Series 1998 Official Statement under the heading “FINANCIAL STATEMENTS,” and (ii) Audited Financial Statements, when and if available, to each NRMSIR and the SID.

(d) The Department’s current fiscal year is July 1 of a calendar year to June 30 of the succeeding calendar year. The City and County promptly notify (i) each NRMSIR, and (ii) the SID of each change in its fiscal year.

Section 2.2. *Material Event Notices.* (a) If a Material Event occurs, the City and County shall provide, in a timely manner, a Material Event Notice to (i) either the MSRB or each NRMSIR, and (ii) the SID.

(b) Upon any legal defeasance of any Bonds of a Series, the City and County shall provide notice of such defeasance to (i) each NRMSIR or the MSRB and (ii) the SID, which notice shall state whether such Bonds have been defeased to maturity or to redemption and the timing of such maturity or redemption.

(c) Each Material Event Notice shall be so captioned and shall prominently state the title, date and CUSIP numbers of the Bonds.

Section 2.3. *Additional Disclosure Obligations.* The City and County acknowledges and understands that other state and federal laws, including but not limited to the Securities Act of 1933 and Rule 10b-5 promulgated under the Securities Exchange Act of 1934, may apply to the Department, and that under some circumstances compliance with this Certificate, without additional disclosures or other action, may not fully discharge all duties and obligations of the Department under such laws.

Section 2.4. *Additional Information.* Nothing in this Certificate shall be deemed to prevent the City and County from disseminating any other information, using the means of dissemination set forth in this Certificate or any other means of communication, or including any other information in any Annual Financial Information or Material Event Notice, in addition to that which is required by this Certificate. If the City and County chooses to include any information in any Annual Financial Information or Material Event Notice in addition to that which is specifically required by this Certificate, the City and County shall have no obligation under this Certificate to update such information or include it in any future Annual Financial Information or Material Event Notice.

Section 2.5. *No Previous Non-Compliance.* The City and County represents that since July 3, 1995, it has not failed to comply in any material respect with any previous undertaking in a written contract or agreement specified in paragraph (b)(5)(i) of the Rule.

Section 2.6. *Transmission of Information and Notices.* Unless otherwise required by law and, in the City and County's sole determination, subject to technical and economic feasibility, the City and County shall employ such methods of information and notice transmission as shall be requested or recommended by the herein-designated recipients of the Department's information and notices.

### ARTICLE III TERMINATION, AMENDMENT, ENFORCEMENT, BENEFICIARIES AND DISSEMINATION AGENT

Section 3.1. *Termination.* (a) The City and County's obligations under this Certificate with respect to the Bonds shall terminate upon (i) a prior redemption or payment in full of all of the Bonds of such Series, or (ii) a legal defeasance of all of the Bonds of such Series.

(b) This Certificate, or any provision of this Certificate, shall be null and void in the event that there is delivered (i) to Director an opinion of Counsel, addressed to the City and County, to the effect that those portions of the Rule which require this Certificate, or any of the provisions of this Certificate, respectively, do not or no longer apply to the Bonds, whether because such portions of the Rule are invalid, have been repealed, or otherwise, as shall be specified in such opinion, and (2) copies of such opinion to each NRMSIR and the SID.

Section 3.2. *Amendment.* (a) This Certificate may be amended by a Supplemental Certificate of the Director, without the consent of the Holders of the Bonds, if all of the following conditions are satisfied:

(1) such amendment is made in connection with a change in circumstances that arises from a change in legal (including regulatory) requirements, a change in law (including rules or regulations) or in interpretations thereof, or a change in the identity, nature or status of the Department or the type of business conducted thereby;

(2) this Certificate as so amended would have complied with the requirements of the Rule as of the date of this Certificate, after taking into account any amendments or interpretations of the Rule, as well as any change in circumstances;

(3) there shall have been delivered to the Director, an opinion of Counsel, addressed to the City and County, to the same effect as set forth in clause (2) above;

(4) there shall have been delivered to the Director, an opinion of Counsel or a determination by a person, in each case unaffiliated with the City and County (such as bond counsel) and acceptable to

the City and County, addressed to the City and County, to the effect that the amendment does not materially impair the interests of the Holders of the Bonds; and

(5) the City and County shall have delivered copies of such opinion(s) and amendment to each NRMSIR and the SID.

(b) In addition to subsection (a) above, this Certificate may be amended and any provision of this Certificate may be waived by a Supplemental Certificate of the Director, without the consent of the holders of the Bonds, if all of the following conditions are satisfied: (1) an amendment to the Rule is adopted, or a new or modified official interpretation of the Rule is issued, after the effective date of this Certificate which is applicable to this Certificate, (2) there shall have been delivered to the Director an opinion of Counsel, addressed to the City and County, to the effect that performance by the City and County under this Certificate as so amended or giving effect to such waiver, as the case may be, will not result in a violation of the Rule as amended or officially interpreted and (3) the City and County shall have delivered copies of such opinion and amendment to each NRMSIR and the SID.

(c) To the extent any amendment to this Certificate results in a change in the type of financial information or operating data provided pursuant to this Certificate, the first Annual Financial Information provided thereafter shall include a narrative explanation of the reasons for the amendment and the impact of the change.

(d) If an amendment is made to the accounting principles to be followed in preparing financial statements, the Annual Financial Information for the year in which the change is made shall present a comparison between the financial statements or information prepared on the basis of the new accounting principles and those prepared on the basis of the former accounting principles. Such comparison shall include a qualitative and, to the extent reasonably feasible, quantitative discussion of the differences in the accounting principles and the impact of the change in the accounting principles on the presentation of the financial information. Notice of such amendment shall be provided by the City and County to (i) either the MSRB or each NRMSIR and (ii) the SID.

Section 3.3. *Benefit; Third-Party Beneficiaries; Enforcement.* (a) By execution of a Series Certificate identifying the Underwriters and the Bonds of a Series, the provisions of this Certificate shall inure solely to the benefit of such Underwriters and the Holders from time to time of such Bonds. Beneficial Owners of such Bonds shall be third party beneficiaries of this Certificate.

(b) Except as provided in this subsection (b), the provisions of this Certificate shall create no rights in any person or entity. The obligations of the City and County to comply with the provisions of this Certificate shall be enforceable by any Holder of outstanding Bonds; *provided, however*, that such right to enforce the provisions of this Certificate shall be limited solely to a right, by action in mandamus or for specific performance, to compel performance of the City and County's obligations under this Certificate. In consideration of the third-party beneficiary status of Beneficial Owners of Bonds pursuant to subsection (a) of this Section, Beneficial Owners shall be deemed to be Holders of Bonds for purposes of this subsection (b).

(c) Any failure by the City and County to perform in accordance with this Certificate shall not constitute a default under any ordinance or resolution of the City and County authorizing the Bonds of any Series or any certificate of the Director providing for the issuance of the Bond of a Series.

(d) This Certificate shall be construed and interpreted in accordance with the laws of the State, and any suits and actions arising out of this Certificate shall be instituted in a court of competent jurisdiction in the State; *provided, however*, that to the extent this Certificate addresses matters of federal securities laws, including the Rule, this Certificate shall be construed in accordance with such federal securities laws and official interpretations thereof.

Section 3.4. *Dissemination Agent.* The Director, on behalf of the Department, shall disseminate the Annual Financial Information, the Audited Financial Statements, the Unaudited Financial Statements, the Material Event Notices and all other information and notices as described in this Certificate. The Director may appoint one or more agents to disseminate such information and notices.

Dated this 23rd day of December, 1998.

SERIES CERTIFICATE OF THE DIRECTOR OF BUDGET AND FISCAL SERVICES OF THE  
CITY AND COUNTY OF HONOLULU, HAWAII, PROVIDING FOR CONTINUING DISCLOSURE

I, the undersigned, Caroll Takahashi, being the duly appointed Director of Budget and Fiscal Services (the "Director") of the City and County of Honolulu, Hawaii (the "City and County"), DO HEREBY CERTIFY that: (i) this Certificate is a Series Certificate as defined in Section 1.1 and described in Section 3.3 of the Master Certificate of the Director of Budget and Fiscal Services of the City and County of Honolulu, Hawaii, Providing for Continuing Disclosure, dated December 23, 1998 (the "Master Certificate"); (ii) Salomon Smith Barney and UBS PaineWebber Inc., as the Underwriters of the \$\_\_\_\_\_ Wastewater System Revenue Bonds (First Bond Resolution), Senior Series 2001 of the City and County, dated July 15, 2001 (the "Series 2001 Bonds"), shall be beneficiaries of the Master Certificate; (iii) the Holders of the Series 2001 Bonds shall also be beneficiaries of the Master Certificate; (iv) the Beneficial Owners of Series 2001 Bonds shall be third-party beneficiaries of the Master Certificate; and (v) all capitalized terms used herein shall have the respective meanings as defined in the Master Certificate.

The NRMSIRs as of the date of this Series Certificate are set forth at:

[www.sec.gov/info/municipal/nrmsir.htm](http://www.sec.gov/info/municipal/nrmsir.htm).

Dated this July \_\_, 2001

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Carroll Takahashi  
Director of Budget and Fiscal Services  
City and County of Honolulu, Hawaii

The above and foregoing certificate  
is hereby approved as to form and legality  
this July \_\_, 2001.

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Corporation Counsel  
City and County of Honolulu, Hawaii

## **Appendix E**

### **Proposed Form of Opinion of Bond Counsel**

[Closing Date]

City and County of Honolulu  
Honolulu, Hawaii

Re: City and County of Honolulu Wastewater System  
Revenue Bonds (First Bond Resolution) Senior Series 2001  
(Final Opinion)

Ladies and Gentlemen:

We have acted as bond counsel in connection with the issuance by the City and County of Honolulu (the "City and County") of \$136,020,000 aggregate principal amount of Wastewater System Revenue Bonds (First Bond Resolution) Senior Series 2001 (the "Bonds"), pursuant to the provisions of Chapter 49, Hawaii Revised Statutes (the "Act"), the City Charter, a Bond Resolution and a Series Resolution of the City and County (collectively, the "Resolution"), and a Series Certificate of the Director of Budget and Fiscal Services of the City and County (the "Certificate"). Terms not otherwise defined herein shall have the meanings assigned to them in the Certificate.

In such connection, we have reviewed the Resolution, the Certificate, the Tax Certificate of the City and County, dated the date hereof (the "Tax Certificate"), an opinion of the Corporation Counsel of the City and County, certificates of the City and County and others, and such other documents, opinions and matters to the extent we deemed necessary to render the opinions set forth herein.

Certain agreements, requirements and procedures contained or referred to in the Resolution, the Certificate, the Tax Certificate and other relevant documents may be changed and certain actions may be taken or omitted under the circumstances and subject to the terms and conditions set forth in such documents (including, without limitation, refunding of the Bonds). No opinion is expressed herein as to any Bond or the interest thereon if any such change occurs or action is taken or omitted upon the advice or approval of counsel other than ourselves.

The opinions expressed herein are based on an analysis of existing laws, regulations, rulings and court decisions and cover certain matters not directly addressed by such authorities. Such opinions may be affected by actions taken or omitted or events occurring after the date hereof. We have not undertaken to determine, or to inform any person, whether any such actions are taken or omitted or events do occur or any other matters come to our attention after the date hereof. Our engagement with respect to the Bonds has concluded with their issuance, and we disclaim any obligation to update this letter. We have assumed the genuineness of all documents and signatures presented to us (whether as originals or as copies) and the due and legal execution and delivery thereof by, and validity against, any parties other than the City and County. We have assumed, without undertaking to verify, the accuracy of the factual matters represented, warranted or certified in the documents, and of the legal conclusions contained in the opinions, referred to in the second paragraph hereof. Furthermore, we have assumed compliance with all covenants and agreements contained in the Resolution, the Certificate and the Tax Certificate, including (without limitation) covenants and agreements compliance with which is necessary to assure that future actions, omissions or events will not cause interest on the Bonds to be included in gross income for federal income tax purposes. We call attention to the fact that the rights and obligations under the Bonds, the Resolution, the Certificate and the Tax Certificate and their enforceability may be subject to bankruptcy, insolvency, reorganization, arrangement, fraudulent conveyance, moratorium and other laws relating to or affecting creditors' rights, to the application of equitable principles, to the exercise of judicial discretion in appropriate cases, and to the limitations on legal remedies against counties in the State of Hawaii. We express no opinion with respect to any

indemnification, contribution, penalty, choice of law, choice of forum or waiver provisions contained in the foregoing documents. Finally, we undertake no responsibility for the accuracy, completeness or fairness of any official statement or other offering material relating to the Bonds and express no opinion with respect thereto.

Based on and subject to the foregoing, and in reliance thereon, as of the date hereof, we are of the following opinions:

1. The Bonds constitute valid and binding special obligations of the City and County.
2. The Bonds are payable solely from and are secured by the Net Revenues and other funds pledged to the payment thereof pursuant to the Resolution, subject to the provisions of the Resolution permitting the application thereof for the purposes and on the terms and conditions set forth in the Resolution.
3. The Resolution has been duly adopted and constitutes the valid and binding obligation of the City and County, and the Certificate has been duly executed and delivered and constitutes the valid and binding obligation of the City and County.
4. Interest on the Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986, and the Bonds and the income therefrom are exempt from all taxation by the State of Hawaii or any county or other political subdivision thereof, except inheritance, transfer, estate and certain franchise taxes. Interest on the Bonds is not a specific preference item for purposes of the federal individual or corporate alternative minimum taxes, although we observe that it is included in adjusted current earnings when calculating corporate alternative minimum taxable income. We express no opinion regarding other tax consequences related to the ownership or disposition of, or the accrual or receipt of interest on, the Bonds.

Respectfully submitted,

ORRICK, HERRINGTON & SUTCLIFFE LLP

per



**Appendix F**  
**Specimen Financial Guaranty Insurance Policy**

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## Financial Guaranty Insurance Policy

Ambac Assurance Corporation  
One State Street Plaza, 15th Fl.  
New York, New York 10004  
Telephone: (212) 668-0340

Obligor:

Policy Number:

Obligations:

Premium:

Ambac Assurance Corporation (Ambac), a Wisconsin stock insurance corporation, in consideration of the payment of the premium and subject to the terms of this Policy, hereby agrees to pay to The Bank of New York, as trustee, or its successor (the "Insurance Trustee"), for the benefit of the Holders, that portion of the principal of and interest on the above-described obligations (the "Obligations") which shall become Due for Payment but shall be unpaid by reason of Nonpayment by the Obligor.

Ambac will make such payments to the Insurance Trustee within one (1) business day following written notification to Ambac of Nonpayment. Upon a Holder's presentation and surrender to the Insurance Trustee of such unpaid Obligations or related coupons, uncanceled and in bearer form and free of any adverse claim, the Insurance Trustee will disburse to the Holder the amount of principal and interest which is then Due for Payment but is unpaid. Upon such disbursement, Ambac shall become the owner of the surrendered Obligations and/or coupons and shall be fully subrogated to all of the Holder's rights to payment thereon.

In cases where the Obligations are issued in registered form, the Insurance Trustee shall disburse principal to a Holder only upon presentation and surrender to the Insurance Trustee of the unpaid Obligation, uncanceled and free of any adverse claim, together with an instrument of assignment, in form satisfactory to Ambac and the Insurance Trustee duly executed by the Holder or such Holder's duly authorized representative, so as to permit ownership of such Obligation to be registered in the name of Ambac or its nominee. The Insurance Trustee shall disburse interest to a Holder of a registered Obligation only upon presentation to the Insurance Trustee of proof that the claimant is the person entitled to the payment of interest on the Obligation and delivery to the Insurance Trustee of an instrument of assignment, in form satisfactory to Ambac and the Insurance Trustee, duly executed by the Holder or such Holder's duly authorized representative, transferring to Ambac all rights under such Obligation to receive the interest in respect of which the insurance disbursement was made. Ambac shall be subrogated to all of the Holders' rights to payment on registered Obligations to the extent of any insurance disbursements so made.

In the event that a trustee or paying agent for the Obligations has notice that any payment of principal of or interest on an Obligation which has become Due for Payment and which is made to a Holder by or on behalf of the Obligor has been deemed a preferential transfer and theretofore recovered from the Holder pursuant to the United States Bankruptcy Code in accordance with a final, nonappealable order of a court of competent jurisdiction, such Holder will be entitled to payment from Ambac to the extent of such recovery if sufficient funds are not otherwise available.


As used herein, the term "Holder" means any person other than (i) the Obligor or (ii) any person whose obligations constitute the underlying security or source of payment for the Obligations who, at the time of Nonpayment, is the owner of an Obligation or of a coupon relating to an Obligation. As used herein, "Due for Payment", when referring to the principal of Obligations, is when the scheduled maturity date or mandatory redemption date for the application of a required sinking fund installment has been reached and does not refer to any earlier date on which payment is due by reason of call for redemption (other than by application of required sinking fund installments), acceleration or other advancement of maturity; and, when referring to interest on the Obligations, is when the scheduled date for payment of interest has been reached. As used herein, "Nonpayment" means the failure of the Obligor to have provided sufficient funds to the trustee or paying agent for payment in full of all principal of and interest on the Obligations which are Due for Payment.

This Policy is noncancelable. The premium on this Policy is not refundable for any reason, including payment of the Obligations prior to maturity. This Policy does not insure against loss of any prepayment or other acceleration payment which at any time may become due in respect of any Obligation, other than at the sole option of Ambac, nor against any risk other than Nonpayment.

In witness whereof, Ambac has caused this Policy to be affixed with a facsimile of its corporate seal and to be signed by its duly authorized officers in facsimile to become effective as its original seal and signatures and binding upon Ambac by virtue of the countersignature of its duly authorized representative.

  
President




  
Secretary

Effective Date:

Authorized Representative

THE BANK OF NEW YORK acknowledges that it has agreed to perform the duties of Insurance Trustee under this Policy.

Form No.: 2B-0012 (1/01)

  
Authorized Officer of Insurance Trustee





